# INVESTMENT

## Principles and Practices

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# Preface to Fourth Edition

This fourth edition represents the most thoroughgoing revision undertaken, even though preceding ones did involve a major effort because of the wealth of illustrations and references to current studies Although in broad outline and philosophy, the book remains the same, certain structural changes have been made

1 The former chapters on the supply and demand for capital funds have been brought together into a single chapter on the investment market to give a clearer integrated picture of the comparative demands made by business, real estate, and governmental borrowers and the channels through which savings flow into investment

2 The former long section describing in great detail the varieties of bonds and stocks has been condensed into a chapter on the essentials of the investment contract that are relevant for the ensuing discussion

3 Concluding chapters have been added to systematize and expand the subject of investment policy for institutions, trust funds, and individuals

4 The material on the analysis of corporate securities has been given a new outline and improved illustrations, which should be helpful for those wishing to make analyses of actual situations

It is hoped that these labors of recasting and bringing up to date will meet the wishes of the many who have so loyally used and thoughtfully advised upon the project A successful textbook should attempt to embody the best thinking of the university and business world Even so, some will undoubtedly find it more efficient to rearrange and omit chapters to make this book meet the requirements of their particular situations

The sentiments expressed in the preface to the third edition (1941) still seem so appropriate as to bear repetition here

The 1929 boom and the crash that followed marked the interval between the original and the revised editions of this book After glittering speculative profits, banks closed, stocks declined precipitously, and real estate and foreign bonds made spectacular, in some cases scandalous, defaults More kaleidoscopic changes could hardly be imagined Yet since the appearance of the revised edition, war clouds of such magnitude have burst that they threaten to inundate and upheave institutions on a world-wide scale The almost miraculous advances of science and industry have been welded into a thunderbolt that endangers the civilization that created them

In such times, the search for security that takes the form of investment might seem hopeless But saving and its employment are processes that form an integral part of our democratic way of making a living Investors and investment institutions cannot flee to a storm shelter, as a speculator might, but must continue to play their part, and share in the fortunes of the economic community

Unless property is taken over by the state under Communism or strait-jacketed under Fascism, private investment will continue As the problems grow more difficult, the need for a thorough understanding of principles becomes even more essential However, these principles can be appreciated and applied only as they are examined in the light of what actually goes on in the bank, the factory, and the market place The authors hope that this edition will prove to have struck the happy medium in combining precept and practice for student and practitioner

RALPH E BADGER
HARRY G GUTHMANN

# Preface to First Edition

WITHIN the past twenty-five years the science of investment has assumed aspects of complexity in proportion to its increasing importance. The extension of the corporate form as a means of conducting enterprises has greatly facilitated the investment process, while the phenomenal increase in our national wealth has resulted in giving large numbers of our population capital for investment purposes. It is but natural, therefore, that a field hitherto explored for the most part by bankers, investment officers of insurance companies, and a relatively few wealthy individuals should now become a matter of lively interest to a much larger group of individuals, constituting the so-called middle class.

This situation has a twofold interest for the student of economics. There is, of course, the strictly vocational aspect of the science. A thorough understanding of the principles of investment is indeed of the utmost importance to the man who anticipates entering the banking field, as a commercial or an investment banker. The same may be said of the man who expects to engage in the selling of securities. Many lawyers, especially those who engage in the work of administering estates or who act as trustees, must also be thoroughly familiar with the subject. On the other hand, nearly everyone hopes, at least, to accumulate some capital during his life and quite naturally desires to employ this in a way that will bring him the maximum return consistent with a minimum risk. This desire can be accomplished only by a reasonable familiarity with the principles of investment.

Quite apart from the vocational aspects of the subject, however, one finds that it has a social significance as well. Material progress depends upon a growing fund of capital goods. Capital goods, in turn, require the double process of saving and investing From a social standpoint, saving is meritorious, yet no benefit accrues from the saving process until direction has been given to that which is saved It is this last process that we call investment It is quite impossible in any one work to cover exhaustively the entire field of investment There are so many ramifications to the subject that no one man can ever say that he has thoroughly mastered them all One man may be fairly well versed in industrial securities, another, in public utility securities, another, in securities of railroads, and still another, in municipals To combine a thorough knowledge of all fields, however, is humanly impossible So it is with the preparation of a book of this nature It is possible to cover only in a rather broad way the more important aspects of the entire field, and to develop those fundamental principles of the science which may be applied later in the process of specialization This is the aim of the present work

The arrangement to be followed provides for a division of the subject into four major parts Part I we shall call Introduction Here will be considered some of the more general aspects of the problem, such as its historical development, factors bearing on the demand for, and supply of, loanable funds, the return on invested capital, and the question of investment policies Part II will be devoted entirely to the contract aspects of various kinds of investments After a brief consideration of bases for classifying securities, consideration will be given to the contractual features attached to different types of secured and unsecured bonds, as well as to special types of bonds The same treatment will be accorded preferred and common stocks A constant effort will be made in this section to point out the relative desirability, from the investor's standpoint, of the more common provisions found in different types of securities, as well as to show clearly the investment characteristics of each major group In Part III we shall consider the entire question of financial analysis Various methods will be set up for analyzing and comparing the financial status of important groups of companies Consideration will be given to industrial companies, public utilities, railroads, to the securities of financial institutions, such as insurance companies, banks, and investment trusts, to real estate investments and government and foreign securities It will be observed that a sharp distinction has been made between analysis of the contractual features and analysis of the financial status of investments Important as each kind of analysis is to the investment problem, they differ fundamentally in theory and hence are treated separately Some acquaintance with the fundamentals of accounting is desirable in connection with financial analyses, although an effort has been made in the following discussion to cover enough of the accounting principles involved to enable the student with little or no training in accounting to grasp the points herein treated In Part IV are considered the mechanics of investment The routine and procedure followed in the purchase and sale of securities, as well as the mathematics ordinarily required to compute bond and stock yields and interest rates, are described The more important services available to the investor are likewise described Taxation in its relation to the investment problem is considered in another chapter The final chapters are devoted to a consideration of the relationship between the business cycle and fluctuations in investment values [1]

When treating a field so broad in scope as the present, it is a perplexing problem to decide the limits that should be set in respect to subject matter For the student or reader who wishes to specialize in the field of investments, a complete treatment is desirable Where the book is to be used as a text for a single semester course, on the other hand, it is suggested that the following chapters be omitted Chapter XV, dealing with the regulation and economics of public utilities, Chapters XX and XXI, dealing with the securities of banks, insurance companies, and investment trusts, and Chapter XXIX, dealing with taxation and investments

The basis for exclusion here is the somewhat specialized character of the material in these chapters However, the teacher conducting the course may have good reasons for making a different selection Thus, where the class has already studied corporation finance, it might be possible to omit a substantial portion of Part II In any event, an effort has been made to treat various topics as integrals, for the purpose of assisting the teacher or student in arranging the amount of reading best adapted to his own circumstances

Throughout the entire book, an effort has been made to combine the theoretical point of view with the practical In the treatment of a subject of this kind, there is the danger of leaning too far in one direction or the other The author's experience in the field has at least brought him in touch with both of these points of view For five years he has been in charge of the courses in corporation finance and investments at Brown University During the past six years he has acted as consultant in a number of tax cases in which he has been called upon to value a rather wide range of industrial securities for inheritance and income tax purposes For a year and a half he was in charge of the statistical department of Bodell & Company, Investment Bankers At the present time he has supervision of the investments of certain large estates in Rhode Island It may rightly be inferred, therefore, that the present book represents an effort to combine the more important principles, both practical and theoretical, evolved in the author's mind as the result of these experiences in the field The arrangement followed in developing the material is essentially that used in the courses the author conducts at Brown University

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[1] In the present edition, Chapters 30, 31, and 32 of the first edition have been revised and combined into one chapter, Chapter 25

The author desires to express his deep appreciation for the suggestions made by Professor James P Adams of Brown University in respect to the arrangement and material in the chapters on public utilities Dr Lucy W Killough deserves much credit for her painstaking work in editing the entire manuscript and checking the statistical material, and in the preparation of charts To Mrs Agnes G Badger appreciation is due for careful attention to the detail work in preparing the manuscript

RALPH E BADGER

JUNE, 1928

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# Part I
# The Investment Markets

# 1
# Introduction

**Stages in economic development.** Economists sometimes classify the various stages in the development of human society according to the characteristic methods of acquiring a livelihood The four periods customarily appearing in such a classification are as follows the hunting and fishing stage, the agricultural stage, the handicraft stage, and finally, the industrial, or capitalistic, stage Capital, in the economic sense, has been employed by man since he first fashioned crude hunting implements Not until the latter part of the eighteenth century, however, can it be said that capital played a dominant part in our economic structure Even as late as the handicraft period, such capital as was employed was mostly in the form of tools used by men who produced largely by hand Under this system, minute division of labor, as we now know it, was nonexistent The worker was largely responsible for the entire product, and no considerable amount of investment was necessary to enter production Individual skill and craftsmanship were at a premium, while standardization and quantity production were unknown

Late in the eighteenth century, a distinct change in production methods took place The economic revolution that occurred in England between 1770 and 1800 was occasioned by a series of inventions in the textile industry and the perfection of the steam engine The opening of new territories, improved methods of transportation, and the widening of markets that quickly followed added impetus to the movement, with the result that, at the beginning of the nineteenth century, the old methods of hand production were obsolete Ownership of factories and machines gradually came into the hands of capitalists, and, consequently, the workers no longer owned the tools of production

The chief characteristic of this new system is the manner in which labor is utilized Instead of proceeding immediately to the manufacture of an article, say, shoes, labor is first employed in the erection of a factory and machinery Later, more labor is employed directly in the manufacture of shoes, but not for some time —perhaps several years after the initial steps are taken The results of machine production are division of labor, specialization, and greatly increased production In fact, the further this development is carried, the more specialized the equipment, and the greater the output

The *sine qua non* of this system of production, however, is the existence of a fund of capital At least some members of the community must be able and willing to divert a part of their current income to the production of factories, railroads, machines, raw materials, and other goods[1] that, of themselves, are unable to satisfy the wants of final consumers, but which are used for purposes of further production This class of goods the economist calls capital, in contradistinction to goods or services that are ready for immediate consumption, and it is important for us to recognize and to maintain this distinction In economics the term "capital" is used to denote factories, goods, or services which, of themselves, are not available in final form

**Material prosperity and capital accumulation.** Enough has been said to indicate that the prosperity of a nation today depends, in large measure, on the existence of a growing fund of capital goods The United States, England, and France are certainly among the richest nations of the world from the standpoint of capital, and at the same time they are among those best supplied with material wealth Countries like India and China, and many nations of Europe, have relatively little capital at their command Agriculture is carried on with primitive tools, and manufacturing, in many instances, is conducted under the handicraft system, with the result that the productive power of labor is very low There is, of course, a close correlation between the productive power of the laborers of a country, their real wages, and the standard of living. A partial explanation of the economic well-being of a nation is found, therefore, in the relative amount of capital at its command.

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[1] There is a general distinction in economic theory between producers' goods, or capital, and consumers' goods See Taussig, Frank W, *Principles of Economics* (New York The Macmillan Co, 4th ed, 1939) Vol I, p 64 While the existence of such a distinction is not unanimously recognized, it will be maintained throughout this book In general, "capital" will be used to designate those goods or services used for purposes of further production, as distinguished from goods used for consumption purposes See Fisher, Irving, *Elementary Principles of Economics* (New York The Macmillan Co, 1913) p 38, Carver, Thomas N, *Distribution of Wealth* (New York The Macmillan Co, 1904) p 125 ff, and Clark, John Bates, *The Distribution of Wealth* (New York The Macmillan Co, 1924), Chapter IX

The use of indirect methods of production, a high degree of specialization in industries, the use of specialized machines, the development of cheap power and adequate means of transportation and communication—all require capital. The creation of capital goods requires willingness and ability on the part of some people in the community to save and invest, that is, to forego the immediate consumption of a part of their current income and to divert it to the production of machinery, factories, power plants, railroads, and other kinds of producers' goods.

Unquestionably, the saving process depends on two things: (1) willingness, and (2) ability. Thus, while two nations may have similar or equal national incomes, one may practice greater thrift than the other and thereby create a larger fund of capital. On the other hand, the extent to which an individual or a nation can save will depend on the amount of its income, since there is a minimum of income necessary to existence, out of which any saving is impossible. Poverty makes thrift difficult, wealth makes it easy. But in addition to *ability* there is the matter of the *will* to save, opportunities to profit from investment, and social and economic institutions that protect and encourage the acts of saving and investment.

It is beyond the scope of this book to analyze the underlying causes of national success or failure. These are partly economic, partly psychological. It is sufficient here to note that saving is more than the putting aside of money by an individual for a rainy day. It is the first step in the creation of a vast array of mines, farm equipment, industrial plants, power plants, railroads, ships, planes, and communication equipment that can make the nation's labor tremendously productive in the presence of adequate natural resources. Too often in the discussion of the high productivity of American labor, especially in discussing compensation, the essential contribution made by the tools supplied by savers and the organizational skills of management is ignored or minimized. These, in addition to sufficient natural resources, are necessary members of the team required to earn a high standard of productivity.

**Investing closely allied with saving.** Closely allied with the act of saving is that of investing. The mere setting aside, or the accumulation, of present goods, or of money—the customary term now used in speaking of wealth—is only one half of the entire investment process Direction must be given to the employment of wealth that has been saved The parable of the talents contains a wholesome lesson for us even today The servant who buried his talent made no contribution to the progress of the world Likewise, the man who hoards his gold has saved, but his act of saving has not benefited society The completed process involves first, saving, or foregoing present consumption, and second, the act of using in the creation of producers' goods that which has been saved This may be done in several ways The saver may himself acquire capital goods, he may intrust his savings to someone who, individually or through partnership, conducts some form of business enterprise, he may turn his funds over to a corporation in return for its stocks or bonds, or he may simply commit that which he saves to a bank or an insurance company, or to some other form of financial institution, which, in turn, will proceed to employ it for him This second part of the transaction we call investing Investing, therefore, may be defined as the act of intelligently determining the uses to which savings shall be put

The importance of a growing fund of capital to the well-being of a nation is universally recognized No less important is the direction or employment of this fund to the best advantage of society The mere act of saving, commendable in itself, is of no benefit to the community unless proper employment is made of that which is saved The erection of a plant to manufacture a perpetual motion machine is a mere waste of resources Likewise the attempted development of a mine in a territory where the ore content is too low to be of any real value represents an economic loss Capital intrusted to a corporation that is operated by unscrupulous promoters merely for the purpose of selling securities also is lost from a social standpoint Prior to the founding of the Securities and Exchange Commission hundreds of millions of dollars were lost annually by the uninformed, who committed their hard-earned savings to such enterprises as fake oil wells and other dishonestly promoted schemes, in the hope of receiving alluring profits that never came Despite the excellent work of the Commission in requiring more adequate disclosure of information, investment losses by individuals are still common They can, and frequently do, result from bad management and adverse economic conditions

Also serious in terms of social loss are the failures of legitimate business Much of this loss results from incompetence or lack of ability on the part of those undertaking business ventures Such losses are a price paid for freedom in business, a freedom that has not only its losses but also its gains in the form of new ideas, many of which were labelled at their outset as folly and impractical by the community

**The art of investment.** Looked at from a broad standpoint, the art of investment deals with the employment of capital The individual, by his pecuniary return or loss, is rewarded for his success or penalized for his failure in the investing of his private funds There is a social as well as an individual aspect to the problem Resources and labor committed to enterprises which cannot profitably fill some economic need are wasted, and society as a whole loses A similar situation may be said to exist where loanable funds are placed in the hands of those who are unable properly to manage undertakings The same result follows loss to the individual investor, and an economic waste of society's resources

Thus are brought to light two of the fundamental principles of investment the enterprise sponsored should fill a definite economic need in a manner capable of yielding a reasonable return, and the management of the enterprise to which funds are intrusted should be both efficient and honest

These two cardinal principles, important as they are, can rarely, if ever, be measured statistically, as can many other factors in the problem This word of caution is given early in an effort to make clear the fact that, regardless of the conclusions that may be deduced from elaborate financial analyses, much depends, after all, on the nature of the enterprise and the character of its management Both of these factors will be reiterated in subsequent pages, with examples to illustrate their vital significance to the investment problem

The social importance of a study of the work of investment arises from the necessity of properly employing the capital of society It is true that, throughout this discussion, emphasis will be placed on the individual's problem, yet, that which proves profitable for the individual generally proves advantageous to the community Although in later pages we shall not emphasize the broad social aspects of the problem, it will not be because they lack importance Concrete development requires us to consider the entire subject largely from an individualistic point of view But, in so doing, we do not for a moment admit that our study is entirely devoted to profit-making formulas The entire subject of investment is closely tied up with the economic welfare of society

**Historical development of the investment problem; early forms of investment** It is only within comparatively recent years that the subject of investment has commanded any very widespread interest. When simple methods of production prevailed, and when the various factors of production were generally assembled under one person, there was little opportunity for investment in the modern sense. This does not imply that some aspects of the problem as it exists today were not then present.

The development of large undertakings by means of division into shares, for instance, may be traced back to the formation of associations in Rome for the farming of taxes. Under this arrangement the tax farmers (or collectors) formed associations with capitalists, who advanced funds for the purchase of rights to collect taxes and shared in the profits of these operations, although they themselves had no share in managing the enterprises. The shares of these associations were quoted and were subject to considerable speculation until Augustus reorganized the entire system of taxation in the Roman Empire.[2]

**Public loans of Italian cities.** More closely akin to our modern dealings in transferable securities, however, was the issuance of public loans by the Italian cities of Venice, Genoa, and Florence in the Middle Ages. As early as the twelfth century the Bank of Venice was formed to act as transfer office for the national debt. Dealings in the French debt also date back to the Middle Ages, and by the sixteenth century we find speculation in City of Paris bonds promoted by chicanery on the part of the nobles and the king, who probably kept his favorites informed as to the state of the public treasury.

**Development of bourses.** Accompanying these dealings in state debts was the development of bourses of commerce on the Continent, or of public places where merchants, bankers, brokers, and others met to deal in bills of exchange, large enterprises, insurance, loans, and similar matters.[3] Early impetus was given to speculative trading on these various bourses by the formation of the Levant Company in 1581 and the Dutch East India Company, chartered in 1602. The shares of the latter company were transferable to bearer, if desired in that form, and were actively traded in on the Amsterdam Bourse. Although the French East India and West Indies companies were established during the latter part of the seventeenth century, the shares of these companies were subscribed to largely by the king and his associates and did not appear to any great extent on the exchanges Shares in the Bank of England, however, were actively traded in during the last decade of the seventeenth century It is significant that the early use of the joint-stock principle in England was rarely applied to manufacturing enterprises In the middle of the eighteenth century Adam Smith observed that "the funded debt, the Bank of England, and the East India Company were the only examples of really large and safe investments "

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[2] Jannet, Claudeo, *La Spéculation et la Finance au XIX^e^ Siècle* (Paris: E. Plon, Nourrit et Cie, 1892), p. 337.

[3] Martin, Germain, *La Grande Industrie en France sous le Règne de Louis XV* (Paris: A. Fontemoing, 1900), in the Bibliothèque de la Société des Etudes Historiques.

Speculative and investment transactions in negotiable securities developed most rapidly in England after the opening of the eighteenth century, although the speculative outbursts occasioned by John Law's schemes for readjusting the national debt of France and the Mississippi bubble indicate that trading was by no means absent in France

During the nineteenth century we find trading in securities carried on in a regular and orderly way on the London Stock Exchange, the Paris Bourse, and the New York Stock Exchange, which was officially organized as early as 1817 Early dealings in this country were chiefly in the national debt, which, in 1816, amounted to $108,510,000[4] There is, however, a record of trading as early as 1801 in the shares of leading bank and insurance companies[5]

**Development of corporations and the investment problem.** The rapid industrial expansion that took place throughout the world during the nineteenth century was naturally accompanied by a corresponding development in methods of finance The perfection

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[4] Conant, Chas A, "The Evolution of Negotiable Securities," *Banker's Magazine,* Vol 70, p 29

[5] Pratt, Sereno S, *Work of Wall Street* (New York D Appleton & Co, 1919), p 6 An advertisement that appeared in the first issue of the *Evening Post,* November 16, 1801, contains a list of offerings which is reproduced below

PRICES OF STOCK

| | *Per Cent* |
|---|---|
| 6 Per Cent Funded Debt | 98¾ |
| 3 Per Cent Funded Debt | 56½ @ 57 |
| 8 Per Cent Loan | 112½ |
| 6 Per Cent Navy Loan | par |

BANK STOCKS

| | *Per Cent* |
|---|---|
| United States Bank | 143 @ 143½ |
| New York (dividend off) | 131½ |
| Manhattan | 132 |

INSURANCE SHARES

| | *Per Cent* |
|---|---|
| New York Insurance Co | 128 |
| Columbian Insurance Co | 137 @ 138 |
| United Insurance Co | 118 @ 119 |

of the corporate form of organization in this country and of the joint-stock company in England has been one of the greatest factors in encouraging investment in the modern sense, and has greatly facilitated business undertakings on a large scale Although by far the larger number of business organizations in the United States are unincorporated, the corporation is more important when large sums of capital are needed for operation Unincorporated concerns are most important in such areas as retailing and service-rendering businesses In manufacturing, however, where a larger capital is typically required only about one half of the concerns are incorporated but these latter produce over nine tenths of the total value of manufactures In the public utility, railroad, and banking fields, by far the greater number of enterprises are conducted as corporations The reasons for the extensive growth in the corporate form of organization lie in its superiority over other forms of cooperative business undertaking The corporation is perpetual in life, unless terminated for cause, or unless its life is limited by the terms of its charter, limited liability is enjoyed by the shareholders, except in the case of some state banks, whose stockholders are subject to double liability, opportunities are offered for specialization among owners and creditors in respect to risks and participation in profits, and investment is facilitated by means of divisible and transferable shares It is no exaggeration to state that our great industrial and financial development would have been impossible without some form of business organization offering the advantages granted to the corporation

The first private enterprises to be promoted as corporations in the United States on an extensive scale were the railroads Likewise, public interest in private enterprises centered, at first, largely around the securities of our railroads The stock of the Mohawk & Hudson was the first railroad stock to be listed on the New York Stock Exchange[6] This took place in 1831 Thereafter, railroad securities rapidly assumed an important rôle in American finance and really dominated the investment market of this country until the opening of the present century The popularity of rail securities was promoted, no doubt, by the public character of the railroad business and its importance in the minds of investors

**Recent tendencies in the investment field.** During the last quarter of the nineteenth century an increasing interest was shown in industrial securities, but not to the exclusion of railroad securities Although the development of industrial companies was rapid at this time, it is nevertheless true that they suffered from cutthroat competition and consequent instability of earnings It was not until the era of industrial consolidation, which came after the opening of the twentieth century, that industrials were looked upon with favor

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[6] Pratt, Sereno S, *Work of Wall Street* (New York D Appleton & Co, 1919), p 10

Except for a few gas and water companies, the public utility industry prior to 1890 was to all intents and purposes unknown At least it may be said that it did not exist as we now know it After 1890 a rapid development in the use of electric traction took place, and at the opening of the present century the electric light and power industry really started on its remarkable career Other public utilities, such as the telephone and the telegraph, have likewise enjoyed a rapid extension during the present century, while the gas industry has also shown a healthy growth

**Scope of the subject** The rapid commercial and industrial expansion that has occurred in this country during the past sixty years, accompanied by an increasingly complex financial structure, has focused attention more and more on the subject of investment Some idea of the growing importance of this field may be gained by considering various estimates of the amount of securities outstanding in the United States alone It has been estimated that the total value of physical property in this country in 1904 was $107,104,000,000,[7] while the visible outstanding securities for that year, exclusive of intercorporate holdings, were $24,393,932,683, with a market value of $35,460,605,877 [8]

The value of securities outstanding in 1928 has been estimated at about $198,000,000,000, made up as follows industrial and miscellaneous, $81,000,000,000, railroads and public utilities, $52,000,000,000, government, state, and municipal, $33,000,000,000[9], and real estate and farm mortgages, $32,000,000,000 [10] Two decades later in 1948, the total value of all debt investment amounted to $333,800,000,000, of which $49,600,000,000 were corporation bonds, $216,500,000,000 were federal government and $16,200,000,000 state and local government obligations, and $51,500,000,000 were real estate and farm mortgages, the market value of all listed stocks on the New

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[7] *Statistical Abstract of the United States,* 1934, p 261

[8] Conant, C A , "World's Wealth and Negotiable Securities," *Atlantic Monthly,* Vol 101, No 1, Jan , 1908, pp 97–104

[9] *Moody's Manual of Investments Industrial Securities* (New York Moody's Investors Service, 1929), p xliv With the onset of violent price fluctuations after 1930, certain of these over-all estimates were discontinued

[10] Includes $1,500,000,000 real estate mortgage bonds as estimated from data given in *Moody's Manual of Investments Banks, Finance and Credit Companies* (New York Moody's Investors Service, 1931)

York Stock Exchange, representing the great bulk of all widely held stocks, totalled $67,048,000,000.[11]

The total wealth of the country was estimated as $353,000,000,000 in 1922.[12] This total was based upon a national "inventory" of the physical wealth—real estate, plant and equipment, live stock, and inventories of merchandise—and avoids the duplication that would result if the securities and credit instruments based upon these tangibles were also included. The estimates of the National Industrial Conference Board for selected years of interest:[13]

ESTIMATES OF NATIONAL WEALTH
(Billions of Dollars)

| | |
|---|---|
| 1922 | 307.1 |
| 1925 | 319.6 |
| 1929 | 362.9 |
| 1930 | 353.7 |
| 1932 | 307.7 |
| 1937 | 315.8 |
| 1938 | 309.4 |

A large part of the decline after 1929 was attributable to falling prices subsequent to that year, which were followed by a rise after 1933. Although later estimates than 1938 are lacking, it would seem probable that, if allowance were made for the considerable rise in the price level resulting from World War II and the population growth factor, the national wealth of a decade later (1948) would show a total valuation running between $550 and $600 billion. The fluctuations in the valuation of the actual physical capital of the country have been substantially less than those of market values of securities issued against such property.[14]

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[11] Bonnell, E. T., "Public and Private Debt in 1948," *Survey of Current Business,* October, 1949, p. 8; *The Exchange* (published by the New York Stock Exchange) January, 1949.

[12] *National Wealth and Income,* Federal Trade Commission, 1926, p. 2. This figure is higher than the Conference Board estimate shown in the table above and also the Bureau of Census figure for 1922 of $320,800,000,000. Again, Harwood estimated national wealth in 1932 at $286,500,000,000 in contrast with the higher figure in the table above. Harwood, E. C., "Wealth vs. Debts," *Barron's,* February 19, 1934, p. 9. The figure given above excludes $3,600,000,000 of the wealth abroad. Estimate based upon figures of Doane, Robert R., *The Measurement of American Wealth* (New York: Harper & Bros., 1933), p. 199. The latter writer, however, includes a number of intangibles such as bank deposits.

[13] *The Economic Almanac for 1940* (New York: National Industrial Conference Board, 1940), p. 296. *Ibid.* for 1949, p. 63.

[14] For data on market values by classes of listed securities during this period, see the *Bulletin of the New York Stock Exchange* (monthly). That an increasing proportion of the nation's wealth is represented by securities is substantially the conclusion arrived at by Berle, A. A., and Pederson, V. J., *Liquid Claims and National Wealth* (New York: The Macmillan Co., 1934).

**Complex nature of the problem.** For the sake of indicating something of the complexity of any measure of the national wealth and of the field of investment opportunities, let us take a birds-eye view of the subject matter for the ensuing chapters The physical wealth of the nation is ordinarily divided into four main categories (1) the tangible wealth owned by business, such as buildings, machinery, and inventories, (2) real estate, consisting chiefly of urban residential property, commercial and office buildings, and farms, (3) the stock of consumer goods owned by consumers, ranging from food on the pantry shelf to durables such as automobiles, radios, and laundry equipment, (4) government-owned wealth consisting of such items as buildings, utilities, and highways Of these groups, consumers' goods (group 3) are generally ignored as investments even though they give rise to problems of principle and national policy An exception is owner-occupied residential housing, which is ordinarily included in group 2, partly for reasons of convenience and partly because it offers investment opportunities

Investment, then, is chiefly in three fields business, real estate, and government Most investment in the field of business takes the form of long-term loans, evidenced by bonds, or of ownership equity, evidenced by stock certificates, in large business units that are incorporated The various forms, comparative importance, and investment suitability of these bonds and stocks are treated later Much real estate is owned by business corporations as a part of their corporate assets and is treated as a part of the field of business investment, when the funds are obtained from stocks or bonds

A major part of real estate is residential and is invested in either by lenders who hold a mortgage or by owners, who speak of investing in real estate equities In addition to residential property, which may range from a humble single-family unit to a huge apartment house project such as those constructed by life insurance companies, there is a lesser volume of structures, chiefly commercial and office buildings, which are classified as real estate commitments

Governments may borrow from investors by issuing bonds in order to build hydroelectric utilities, bridges, highways, and public buildings They may also create what are, in effect, huge consumption loans when they sell bonds to wage a war, to cover a budgetary deficit for current spending, or to pay a soldiers' bonus

The multitude of debt and ownership instruments that evidence the property rights of the investor are the subject matter of investment study There are also the financial institutions, such as banks, insurance companies, savings and loan associations, and investment companies, that collect the savings of the country and direct them into these channels in a manner that relieves the individual investor of many of the cares of investment management and offers him a means of recovering his money when he wishes to spend his savings The rise of a great middle-income class of investors, who have taken over a substantial part of the investment formerly confined to the wealthy minority, has made delegated management and recoverability of principal of greatly increased economic importance When wealth consisted chiefly of great landed estates, of farms, and of family businesses that were handed down within the family such was not the case

**Need for scientific study. investment versus gambling** Although the task of mastering the subject of investment today is far more difficult than formerly, in that it is vastly more complex, it is none the less interesting It is also true that the field now offers as great or greater rewards for those who really devote serious study to its many ramifications There are some successful investors who, by devoting constant attention to their commitments, have been able to earn a very high rate on their funds Such investors typically employ a portion of their funds in common stocks or convertible bonds This can be done, however, only by an exhaustive study of market factors and securities and does not result from a mere reading of various financial services, or from following random "tips" Some "investment services" and brokerage house recommendations have merit in that they actually analyze the securities on which they offer advice Some are worthless in that they are inspired by a desire to promote the sale of a particular security, or are merely a reflection of street gossip One will do far better, in the long run, to restrict his investments to the most conservative types, which offer only a very limited return, than to "gamble" his savings upon such advice

Gambling is sometimes defined as "blind chance-taking" Such a broad definition would include "playing the stock market" A more restricted and objective definition of gambling is "risk-taking for gain in which the participant creates the risk, as in a wager or a game of chance" Speculation is contrasted as the assumption of risks that are inevitable in our economic society The owner of commodities, such as cotton and wheat, or of common stocks, assumes a risk that is inherent in the conduct of business It should be added that unwise or unskillful speculation may produce economic ills as disastrous as gambling

Speculation is often defined as the purchase of high-risk securities, such as those of a newly organized company of uncertain success, investment, as the purchase of low-risk issues with a relatively predictable future Another definition emphasizes motive speculation is primarily for the purpose of appreciation in principal, investment, for income in the form of interest, dividends, or rent One investment counsellor distinguishes between investment and trading activities by stating " investment as such seeks its return from the earnings of capital invested, rather than the profits to be realized through buying and selling operations in a fluctuating market "[15] Price changes are more often than not the result of general external conditions that affect a whole group of securities, rather than the result of factors peculiar to the particular business Speculators seeking to reap short-run profits often ignore the situation of the individual company Investors, however, taking a more permanent position, give attention to the analysis of the specific issue in order to determine probable future income

The previously quoted writer distinguishes one type of price change by stating that capital appreciation that results from the profitable reinvestment of earnings is a legitimate investment objective[16] Others would be willing to include capital appreciation arising from other factors

The general business picture becomes background for outlining the broad policy to be pursued The literature of investment emphasizes the approach that analyzes the individual commitment, and our study will center around the proper methods for such an investigation Reference will also be made to the speculative influences The more unstable our economic society, the more important do such factors become and the more difficult it becomes to plan a satisfactory investment policy

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[15] Dunn, Henry W "A Persistent Delusion," *Investment Counsel Annual*, Vol II p 6, 1939

[16] *Ibid*

# 2

# The Investment Market

Before taking up the detailed problems of investment analysis and investment policy, a brief examination of the investment market will give us an idea of the field of operation Such a preliminary survey should have value both for those concerned with the practical work of investment and for those interested in economic analysis Too often those engaged in the work of the investment world become so engrossed in immediate problems that they neglect the wider setting in which they operate to the detriment of long-run policy formulation On the other hand, the economist sometimes fails to acquire that intimate knowledge of the institutional background that determines the degree of realism of his application of theory to practice This dual need for the larger view explains the present and three succeeding chapters covering (1) the investment market, where the forces of supply and demand for capital funds meet, (2) the general problems of investment policy that condition the administration of savings, and (3) the rate of return, or the price paid for the savings of the investor

In this chapter, the investment market, instead of being studied in the abstract language of economic theory, will be reviewed in the concrete measures of demand for savings as they are reflected in the amounts used by business, housing, and government activities Similarly, the supply will be seen in the flow of funds from individuals both by their direct purchase of obligations in the three fields mentioned and by indirection through financial institutions Business corporations and government also contribute to the supply of savings

Such a survey of the market should not be thought of as a mass of statistics for memory-training Many of such figures are necessarily approximate in any case Their purpose is to give a sense of proportion as to the relative importance of the several areas for the investment of savings, the comparative significance of direct and indirect investment, and of the financial institutions involved through which individual savings flow when indirectly invested, and the trends in the various sectors of supply and demand For example, the reader will see how a startling revolution in the investment world has been the huge rise in the importance of the Federal debt during World War II to a point that has caused it to overshadow other fields Historical precedent would argue a likely return to a better balance between public and private debt During the war the Government developed a comparatively new thrift "institution" in the widely-held and popular Series E Savings bonds, which in a few short years grew to a larger size than such important institutions as the mutual savings banks and the savings and loan associations

A bird's-eye view of the inflow and outflow of savings into the investment market covers the supply and demand factors that determine the rate of return that is the price paid the investor for the use of his funds Any light shed on the matter of the price for capital has the same importance for the investor that agricultural prices have for the farmer or wage rates for the worker

**The investment market.** In its broadest sense, the investment market includes any form of commitment into which savings may flow It would include not only the stocks and bonds of business, the mortgages and equities in real estate, and the debt of governments, but also bank deposits, money, and even such things as jewels and postage stamp collections that have been acquired as a store of value Conventional discussion is usually limited, however, to those forms of property that produce a money income For the most part this text will follow the customary pattern

Most writers apply the term "*capital* market" to the market for the *permanent* forms of investment such as bonds, stocks, and mortgages The securities market would be limited to the sub-field of stocks and bonds The "*money* market," on the other hand, is thought of as the market for *short-term* lending, the field dominated by the commercial banks with their loans, typically for less than one year, to industry, commerce, agriculture, and finance Actually, the capital and money markets are so intimately interrelated that the supply-demand factors operating in either tend to spread quickly from one to the other

**Source of savings** In the preceding chapter, savings were discussed as though derived solely from individual thrift Individual savings are the dominant factor in the capital market but two other substantial factors are the savings of business corporations and of governments.

A general idea of the magnitude of individual and corporate savings and their year to year fluctuations may be had from the accompanying table. Government savings are discussed later. The figures are *net,* that is, some individuals will be saving at the same time that others are spending more than their current income, and the tabulated figure is the net result. Similarly, retained earnings of growing businesses may be offset by the shrinkage in net worth of others either because of losses or the payment of dividends in excess of current earnings. The table also permits a comparison of net personal savings with the personal income from which the savings are taken.

PERSONAL AND CORPORATE SAVINGS 1929–1948
(Billions of Dollars)

| *Year* | *Personal Income* | *Personal Savings* | *Savings to Income* | *Undistributed Corporation Profits** | *Total Private Saving* |
|---|---|---|---|---|---|
| 1929 | 85.1 | 3.7 | 4.3% | 2.6 | 6.3 |
| 1930 | 76.2 | 2.9 | 3.8 | –3.0 | –0.1 |
| 1931 | 64.8 | 1.8 | 2.8 | –5.4 | –3.6 |
| 1932 | 49.3 | –1.4 | –2.8 | –6.0 | –7.4 |
| 1933 | 46.6 | –1.2 | –2.6 | –2.4 | –3.6 |
| 1934 | 53.2 | –0.2 | –0.4 | –1.6 | –1.8 |
| 1935 | 59.9 | 1.8 | 3.0 | –0.6 | 1.2 |
| 1936 | 68.4 | 3.6 | 5.3 | –0.3 | 3.3 |
| 1937 | 74.0 | 3.9 | 5.3 | — | 3.9 |
| 1938 | 68.3 | 1.0 | 1.5 | –0.9 | 0.1 |
| 1939 | 72.6 | 2.7 | 3.7 | 1.2 | 3.9 |
| 1940 | 78.3 | 3.7 | 4.7 | 2.4 | 6.1 |
| 1941 | 95.3 | 9.8 | 10.3 | 4.9 | 14.7 |
| 1942 | 122.7 | 25.6 | 20.9 | 5.1 | 30.7 |
| 1943 | 150.3 | 30.2 | 20.1 | 6.2 | 36.4 |
| 1944 | 165.9 | 35.4 | 21.3 | 6.1 | 41.5 |
| 1945 | 171.9 | 28.0 | 16.3 | 3.8 | 31.8 |
| 1946 | 176.9 | 10.3 | 5.8 | 8.1 | 18.4 |
| 1947 | 193.5 | 5.1 | 2.6 | 12.1 | 17.2 |
| 1948 | 211.9 | 12.0 | 5.7 | 13.2 | 25.2 |

* Not adjusted for price changes of inventory.
Source: *Survey of Current Business,* July, 1949, pp. 10, 11.

The figures in this table yield certain conclusions: (1) personal savings, even when taken on a net basis after personal dissaving are an important part of national income flow, (2) both personal and corporate savings fluctuate with the rise and fall of the national income, and (3) in periods of depression, both personal and corporate savings tend to be dissipated.

Such figures, although useful, give no idea of the importance of savings to the individual investors who save This is partly because *net* figures merely represent the net excess of gross savings over savings that are being retrieved and spent A stable country with a constant population in which growth has ceased could show no *net* savings and yet have an investment market and thrift institutions of tremendous importance to the productivity of the nation and the well-being of the savers Furthermore, statistics can never tell the whole story of the importance of savings to individuals spending their savings to meet emergencies such as illness or unemployment, to enjoy a long-planned holiday, travel, or to retire from work as a self-endowed veteran of industry Other investors may at the same time be replacing this dissaving, thereby maintaining the total funds engaged in the investment market

Similarly, while no *net* additions are being made to the capital equipment of the country, a large volume of construction work may be going on, but the new building is offset by the loss of old ones from retirement and loss by fire, as well as losses in value by depreciation[1] Governments may in like fashion be replacing old highways and public buildings with an equal value of new construction One of the reasons the American people enjoyed such a high standard of consumption during World War II while expending such huge sums on the holocaust of war was that they were like a pensioner living on his principal The nation was enjoying the use of a huge investment in industrial, transportation and utility equipment which was allowed to depreciate with less than the customary replacement In the same way another large investment in consumers' durable goods, such as housing, automobiles, and household equipment, was used and enjoyed but was wearing out without the usual replacements

These comments are made lest these statistics of net savings, valuable as they are for some purposes, be mistaken as a measure of the significance of savings and investment No figures are available for the gross savings concept in the sense described here Only clues exist in the figures on the turnover of ownership of savings deposits, life insurance policies, and of securities Such turnover tells a part of the story of dissaving or the use of the savings to meet the changing needs of the investor One of the prime requirements of a good investment market that is to serve adequately the needs of the small and middle-class thrifty is that it have a liquidity that will permit recovery of savings as need arises This characteristic would be much less important were the investment wealth of the nation concentrated as fairly permanent holdings in the hands of a limited number of wealthy persons

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[1] This importance of the two offsetting factors explains why the Department of Commerce figures show gross investment to include all construction, both for additions and replacements, and show business depreciation charges among the elements that make up "gross savings," a concept differing from that in the text above

**Corporate savings** Where a part of the income of a business is left in the business and reinvested, the result is a saving just as truly as if such income were paid out to the owner stockholders and then reinvested from their personal incomes Such business savings are an important source of funds in the American economy, as may be seen by a comparison of their total with personal savings in the table on page 18 Business savings by unincorporated concerns are included under personal savings They parallel corporate savings but run at a lower level Under our Federal income tax system, earnings of a sole proprietorship or a partnership are not taxed as such in the business but are reported as a part of the personal income of the proprietor or partner His personal income taxes are based upon total income, which includes such profits In such cases, the owner is under pressure to withdraw an amount equal to personal income taxes as well as any 'salary" for his personal living expenses The disposition of any remainder of business income over and above the two items of income taxes and salaries is a matter of balancing the needs of the business against the need for further spending upon personal wants and the desire to invest outside of the business Because of the difficulty of distinguishing between what is a reasonable salary for services and what is the return for the use of the owners' capital in an unincorporated business, it is hard to say how much business savings come out of profit and how much come out of salary income in this particular field Probably a major part of the growth of ownership in the proprietorship and partnership forms of business is from retained earnings rather than from the investment of new outside funds

In the case of the corporation, however, a separate legal personality exists, and in a large corporation where ownership is generally widely separated from managership, the board of directors are somewhat removed from the immediate pressure of the stockholders for dividends, and they may care for the capital needs of the business by retaining much of the earnings after any federal income taxes that are paid The large corporation has in this way greatly reduced the "pain of savings" The mental anguish of "not spending" is much less if the dollar of income rests in a corporate treasury and never reaches the stockholder to "burn a hole through his pocket."

The figures for undistributed corporation profits, representing net corporate savings, understate the business importance of this source of business funds.[2] Even in years of no *net* additions many individual businesses may be growing from this source of funds but their growth is offset by the losses of capital that other concerns are showing at the same time. These latter businesses may actually continue in business rendering an undiminished flow of goods or services for a considerable period if the losses do not make too great a drain upon the cash funds of the business but are represented chiefly by decreases in the value of the fixed assets, as from the slow process of depreciation.

**Government savings.** Very often the government is thought of only as a source of demand for investment funds, but governmental units also affect the supply by their savings that result in the retirement of previously issued debt. When a governmental body has a budgetary surplus and retires its debt, the resulting shrinkage in the supply of investments may be thought of as a negative factor on the demand side reducing the net figures rather than as an addition to the supply of available funds. Consequently figures for this particular "savings" factor will appear at that place in our later discussion of demand and of the available amounts of investment obligations in the governmental field.

**Motives for individual savings.** Rather than take our national accumulation of savings for granted, the factors that make it possible on such a rich scale are worth at least passing mention. First let us note the things for which people feel the need to save.

1. *Provision for emergencies.* The desire to provide for a "rainy day" fund is fairly widespread. Even in a simple society, food

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[2] From an economist's point of view, these figures also misstate real profit retention during a period of changing price level because they may reflect mere price inflation of inventory. The Department of Commerce figures show a separate "corporate inventory valuation adjustment" to correct for the influence of such price level changes. No adjustments are made for the changing purchasing power of other assets nor for the difference between reported depreciation of fixed assets and the amounts required to actually replace such assets at the current price level.

The relative importance of the inventory adjustment factor can be seen by comparing its amount in years of marked price inflation, such as 1946 and 1947, with the total of undistributed corporate profits.

| | *1945* | *1946* | *1947* | *1948* |
|---|---|---|---|---|
| | | (Billions of Dollars) | | |
| Undistributed profits | 3.8 | 8.1 | 12.1 | 13.2 |
| Inventory adjustment | –0.6 | –5.2 | –6.0 | –2.2 |

(Adjustment needed to correct for price inflation factor)

Source: *Survey of Current Business*, July, 1948, p. [illegible] may be stored against the winter season, or, as in the case of Joseph of Egypt, against years of crop failure While many hazards, like illness, accidents, and unemployment, are covered by personal or social insurance, there is still room for this motive where prudence and foresight are present

2 *Accumulations for expenditure requiring a large outlay* Vacation, travel, and the purchase of large items, such as an automobile or a house, call for outlays beyond the reach of the current pay envelope Some borrow to pay for these things while others find greater enjoyment as well as economy by saving before spending Where borrowing does take place, the repayment is typically over a short term, except in the case of housing Consequently such consumer lending falls primarily within the scope of institutions in the short-term, or money, market rather than the investment market While such borrowing for consumption purposes represents a demand for funds at the outset, its subsequent retirement contributes to the figures for savings

3 *The desire for the independence and financial opportunities associated with owning a business* This motive leads not only to saving for the initial setting up of the business but also the subsequent savings to expand the business once founded When we realize the great majority of the three to four million business units in this country are small or medium sized units owned by one or a very few individuals who wish to be in business for themselves, the importance of this motive can be better appreciated The presence of such a large group of independent businessmen has important implications for the preservation of competition, as a training ground for business leadership, and for the initiation of new ideas and methods in businesses

4 *Desire for the security of investment income* This motive is likely to be stronger as the individual's income passes the point where it just secures for him what he regards as the necessities of life The generalized wish for investment income is likely to be less potent among persons with low income than their immediate want for goods and services which leads them to spend their personal incomes for themselves and family

5 *Provision for retirement* With the increasing length of life in this country, the desire to provide for income after the age of retirement has become a large and growing element in the investment picture Only a few decades ago those who lived beyond the age of 65 were a very small minority and those few who did found their protection against the want of old age in the family circle Today the small family, increased incomes, and the traditional

American desire for independence has made the desire for a retirement income after the age of 65 a major factor in the savings picture, perhaps the most important one for the majority of people in this country. Currently, one out of nine persons of the ages of 20 and over is in the age group of 65 or over. It is not unlikely that this proportion will amount to more than one out of seven in a few decades, say by 1980.[3]

The old-age and survivors insurance plan of the Federal Government for providing for old-age income on a modest, some say inadequate, basis depends upon taxation rather than accumulation of large invested reserves such as a private insurance company would need to make provision for a retirement income in the form of an annuity. Even without formal actuarial reserves, the Federal Government has nevertheless accumulated a partial "reserve" that already amounts to over $11 billion (1949), and this fund is expected to amount to from $20 to $22 billion in the next few years.[4]

Since 1940 there has been a sharp increase in private pension plans by business corporations, especially for executive personnel. Labor unions have added their demands for retirement compensation to supplement the Federal old-age allowance. Where these plans are "funded" by the collection of sums during the period of a worker's employment so that the burden will rest upon his productive period rather than upon the period after retirement of the employee, the result is an accumulation of funds available for investment. Some of these funds are held by life insurance companies under group annuity plans and others by trust companies. No figures are available on the latter type of fund but the influence of this development is seen in the rise of annuity premiums and reserves of life insurance companies. For all life insurance companies the annual volume of annuity premiums has risen from $386 million in 1940 to $799 million in 1948. These annuities represent present or future annual incomes of nearly $1.1 billion. Annuities are currently paying out a little less than one fourth of that sum.[5]

Some retirement plans make no formal accumulations but depend primarily upon current contributions from the business or the industry to care for their retired employees. In such cases the fund may collect a surplus in some years which is designed to help the fund over possible rough spots.

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[3] Federal Old-Age and Survivors Insurance Trust Fund, letter from Board of Trustees, April 7, 1949. 81st Congress, 1st Session, Senate Document No. 41, Table 9, p. 18. Some have estimated this proportion will be as high as one out of six persons.

[4] *Ibid.*, p. 11.

[5] *Life Insurance Fact Book* (New York: Institute of Life Insurance, 1949), pp. 24–25.

**Opportunities for investments.** In addition to the foregoing motives for savings plus an ability to save, there must be opportunities for investments, i.e., a demand for formal savings, before investment markets can arise and social institutions created to foster thrift and make individuals willing to save. The rising use of capital goods after the Industrial Revolution has had the dual effect of both building the ability to save by producing larger incomes and so the supply of funds, and also creating the need for investment in a swelling total of plant and equipment, or a demand for funds. Moreover the increased wealth of the country has made possible better housing, which constitutes a major demand for investment funds.

Too sharp an economic distinction between producers' and consumers' durable goods is misleading. When a community becomes wealthy enough to permit the individual to own his own home, that investment provides just as valuable a stream of economic services as though it were owned by a landlord and yielded a money income. Similarly the personal automobile provides transportation services over a period that could be supplied by such public utilities as the railroad, the streetcar, and the bus. Nevertheless this text will, as a matter of convention and custom, ignore consumer goods as "investments" except insofar as residential housing offers money income investments either in the form of mortgages or equity. *Some will undoubtedly wish to include residential housing occupied by the owner and regard the investment income from such houses as the rental income saved by the owner, minus any expenses of operations.*

While the institutions of investment could exist without capitalism upon a limited scale, as in the government loans of the precapitalistic era, they owe their present magnitude and importance in this country to the technological development of a capitalistic society that uses a great variety of durable goods in production. Once developed the saving power of a nation may increase the market for governmental borrowing for non-productive purposes far beyond what a simpler and less wealthy society could provide. The volume of financing by our own Federal Government during World War II was a striking evidence of this development. The scale of war expenditures, in turn, grew extraordinarily with the use of capital-like equipment in the form of planes, ships, and heavy weapons, together with the plants and machinery necessary for their production. If preliminary expenditures are any indication of the amount of investment needed in the use of atomic energy plants, they may provide another major demand for capital funds in the future should such energy be used for peacetime production

**Social institutions favorable to investment** The final condition essential to an investment market is the existence of favoring political and economic institutions Only four major institutions will be indicated here

(1) An established and stable government with legal safeguards that protect contractual and property rights, (2) a reasonably stable currency, (3) financial institutions that aid savings, and (4) the corporate form of business organization

1 *Stable government and legal safeguards* Just as no farmer would plan a crop if he could not expect to enjoy the harvest, so investors must hope to enjoy a reasonable return and, generally, the recovery of their principal before they are willing to invest After thrift has been fostered and wealth accumulated, the amount of compensation necessary to induce investment may fall to a very low figure as we shall note in chapters 5 and 6 Some countries that have appealed to the American investment market for capital funds have done so because of temporary besetting misfortunes and have proved satisfactory debtors, but others appealing to us for funds failed to observe this fundamental prerequisite in their domestic policies An unstable government or inadequate legal safeguards have prevented their accumulation of a fund of savings among their own citizens

The economic order prevailing in the United States is labeled by some as a "capitalistic" order and is denounced as undesirable Such critics are often not opposed to capitalistic production but only to the private ownership of that part of the nation's wealth that is used in production, and they seek public ownership either under a socialistic or a communistic state In general, these advocates ignore the increased efficiency resulting from the competitive forces of private enterprise and the greater freedom for the individual in a society where everyone is not compelled to work for the one big boss of the state It is true that some recognize these points but are so desirous of the security that they believe will come with the government ownership of the tools of production that they are willing to forego the larger production and greater freedom of the present system Much of Europe, with its cartelization of important industries and relatively great concentration of wealth, has been more vulnerable to the arguments of socialism than the United States The very size and wealth of the American markets has made possible the growth of business units large enough to give the full advantages of large-scale production without necessarily creating monopoly It is regrettable that too often those who advocate socialism because of the monopolistic tendency in certain sectors of American industry are not appreciative of the disadvantages of complete monopoly that would follow from the government becoming the sole owner of all the instruments of production They fear Big Business but do not fear Big Government

2 *A reasonably stable currency* A sound money system ranks along with the other legal and political safeguards as a necessary prerequisite to the growth of thrift institutions and a broad investment market Much of investment takes the form of debts payable in the currency of the country Gross inflation in prices, so characteristic of war finance, destroys much of the real value, or purchasing power, of these debt claims It caused a complete breakdown of business and investment relations after World War I for some countries like Germany, Austria, and Russia Quick to recognize the importance of the problem after World War II, military authorities gave special attention to this problem in occupied countries However, many of the postwar problems, particularly those of international trade are allied to the unsolved currency problems of victor as well as vanquished countries

Deflation can be equally disastrous by shrinking the nominal value of inventories, plants, and real estate to the point of producing wholesale bankruptcy, as it has on numerous occasions, including the period of 1929–1933 in the United States A reasonably stable price level, insofar as it can be produced by wise monetary management, is one of the major contributions of good government to economic well-being generally, and so, in turn, to the investment market and the investor

3 *Financial institutions to aid savings* As investment becomes more widespread and not solely the function of a limited number of wealthy persons, financial institutions designed to bring savings together and direct them to productive uses grow in importance The increasing importance of such institutions will be more apparent as their holdings of investments are studied later in this chapter

The largest of these institutions are the commercial banks, the savings banks, the savings and loan associations, the life insurance companies, and the investment companies All save the last assume fixed dollar liabilities for the sums entrusted to them by savers and, in turn, they are chiefly investors in various forms of debt that represent fixed dollar claims Only the investment companies have issued shares representing fractional interests in a pool of investments that represent chiefly ownership in the form of common stocks of business corporations The character of all these institutions will be more clearly defined as later reference is made to their investment policy and their place in the investment market

Two other "institutions" should be referred to here for their place in the investment market, namely the investment banker and the mortgage banker The investment banker is a merchant of securities He buys the bonds and stocks of corporations and governmental bodies for resale to investors, both individual and institutional His work should be distinguished from that of a broker who acts merely as an agent in buying and selling securities for a commission The mortgage banker is typically a broker in mortgages, chiefly on residential property, bringing the borrower and lender together Ordinarily he continues to serve the lender by the collection of interest and principal and by performing collateral services in the management of the loan The bulk of present day mortgage lending is by financial institutions Mortgage banking is often conducted by special departments of commercial banks and by real estate firms

4 *The business corporation and capital accumulation* Sometimes taken for granted, the business corporation should be recognized as one of the institutions that have had an important part in facilitating the flow of savings into business The three characteristics of the corporation that have been of paramount importance for the investor are (1) the limited liability of its shareholders for business debts, (2) its perpetual life, and (3) the ready divisibility of its debt and its stock into convenient units that are readily transferable In contrast to the owners of a corporation, whose liability as stockholders is typically limited to the original investment, the sole proprietor or member of a business partnership is liable for all the debts of a business to the full extent of his personal wealth as well as for his original investment in the business Investors could hardly be expected to risk their savings under such conditions on a scale essential to the building of our giant railroads, utilities, and industrial businesses

Moreover there is a need for a form of business organization that will have as permanent an existence as the business itself But a partnership breaks up with the death or retirement of any of its partners So the perpetual corporation, with its ability to carry on indefinitely without regard to the life or fortunes of its several owners, constitutes an investment mechanism of the greatest significance

Finally, a partnership interest cannot be transferred without the consent of the other partners, and in any case the investment is often of considerable size  Such bars to ready resale handicap the acquisition of ownership funds by a partnership as compared with a corporate form of organization  In contrast, the stock of a corporation is ordinarily divided into shares of convenient market value, generally $100 per share or less, and they can be transferred freely from person to person  Actual salability will, of course, depend upon the popularity of the issuing corporation and the previous distribution of shares to a limited or to a wide list of persons

Other elements that have fashioned the American investment markets might be added to the foregoing list but will be ignored here as of secondary interest  The national characteristics and productive skills of a population that has been drawn by American opportunities from all parts of the world, the natural resources, the development of invention, all are forces that must be left for the discussion of the economic historian  Our attention will now turn from the supply side of the investment market to the demand side, with a brief survey of the figures that indicate the sums engaged in each of the major investment markets and how the shares are channeled to them through the more important financial institutions

**Demand for funds by business** The business demand for funds is generally taken from the balance sheets of business  Data on security flotations are generally less satisfactory as measures of demand even when confined to "new money" issues because of the difficulty of measuring the return flow in the form of repayments upon old obligations  Balance sheets on the other hand reflect the net changes from year to year  Businesses acquire funds partly by borrowing from creditors, partly from owners who will buy new stock, and partly by the investment of retained earnings[6]

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[6] In many discussions, depreciation is spoken of as a source of funds  Depreciation that represents the loss of value of business assets is not an actual source of funds  What is meant is that those sums that are collected from customers are not spent immediately to cover depreciation as in the case of other ordinary expenses  Consequently at the end of a short period, such as the fiscal year for which profit and loss is being reported, the management will have left over from sales income an amount equal to the noncash depreciation expense and the retained earnings  In that period these funds may be spent to build up other assets or to reduce debt rather than to replace the depreciated assets

Because the funds are merely being moved within the business, depreciation is ignored here even though for some purposes it is an important factor in discussing the flow of business funds

In the study of the investment markets any short-term debt will ordinarily be ignored This is because bank credit on the one hand involves the "money" market rather than the "capital," or investment, market, and on the other hand, trade credit, the other large source of short-term credit, is an *interbusiness* phenomenon and as such does not constitute an addition to the *consolidated* or *over-all* demand of business for funds However, when bank deposits are sometimes included as a part of the nation's investments it follows that the credits that the banks extend, whether as short-term loans or as investments in mortgages and bonds, are being included by indirection in the picture

The table on page 30 shows the long-term debt of business The relative importance of the demand of railroads, public utilities, and the variety of manufacturing, trade, and extractive businesses, which are called "industrials," in the investment market can be judged from the later discussion of investments in those several fields The great bulk of this long-term debt is in the form of corporate bond issues

A rising demand for long-term credit by business was shown during the very prosperous and expanding 1920's when the total amount rose from $32 6 to $51 1 billion, or at an average rate of two billions per year as shown in the table on page 30 This expansion was followed by the shrinkage of the depressed 1930's, during which period the decrease ran at an average rate of three-fourths billion per year so that the total fell to $43 7 billion in 1940 During that decade repayments were more important in the reduction than eliminations resulting from business failures and bankruptcy The important part of debt reductions resulting from railroad bankruptcy did not take place until major reorganizations were completed in the 1940's Even the business recovery of the late 1930's did little to revive the over-all demand for debt funds Debt increases for this decade occurred only in the years 1937 and 1938

The war years 1941–1945 actually witnessed a further debt decrease in the long-term debt of business During this period even normal replacements of plant and equipment were largely deferred and money earned for the depreciation of old assets plus retained war earnings were used to reduce corporate debts and care for such minor needs as did arise during that period Special facilities used only for war purposes were largely built for the government account, or, when built by private industry with its own funds, corporations were permitted to write them off completely

LONG TERM CORPORATE DEBT AND PERCENTAGES HELD BY LEADING INSTITUTIONS

| | | Proportions held by | | | |
|---|---|---|---|---|---|
| *Year* | *Total*[a] *(Billions)* | *Life Insurance Companies*[b] | *Mutual Savings Banks*[c] | *Commercial Banks*[d] | *Total by Institutions* |
| 1920 | $32.6 | 6.7% | 5.5%* | 16.0%* | 28.2% |
| 1925 | 39.7 | 7.6 | 5.5* | 18.4* | 31.5 |
| 1930 | 51.1 | 9.6 | 6.3* | 15.9* | 31.7 |
| 1935 | 43.6 | 11.9 | 6.7* | 9.6 | 28.2 |
| 1940 | 43.7 | 19.7 | 4.8 | 8.0 | 32.5 |
| 1945 | 38.3 | 26.9 | 3.1 | 8.6 | 38.6 |
| 1948 | 49.6 | 37.7 | 4.4 | 6.9 | 49.0 |

* As of June 30.

[a] Bonnell, E. T. "Public and Private Debt in 1948," *Survey of Current Business*, October 1949, p. 8.

[b] Estimates of all companies based on data of 49 companies constituting 90–95 per cent of the total assets of the industry. 49 company data from *Proceedings of Forty-first Annual Meeting of Life Insurance Association of America*, December, 1948, p. 36, 1948 estimate by author based on data from 1949 *Life Insurance Fact Book* (New York: Institute of Life Insurance, 1949) p. 48.

[c] 1920–1935 *Banking and Monetary Statistics*, p. 25. 1940–1948 *Federal Reserve Bulletin*, April, 1949, p. 398.

[d] Data are for category "Other Securities," which includes all investments except U. S. Government and obligations of states and political subdivisions. 1920–1930, data for all commercial banks *Annual Reports of the Comptroller of the Currency*. 1935–1940, data for all insured commercial banks *Banking and Monetary Statistics*, p. 109. 1945–1948 *Federal Reserve Bulletin*, September, 1949, p. 1102.

during the war years. Large current asset needs were often financed by bank loans guaranteed by the Federal Government, as in the case of the aircraft manufacturing industry.

The postwar revival, stimulated by a long dry spell in the production of durable goods both for industry and for the consumer, is reflected in the great expansion of industry's long-term debt after the end of World War II in the 1945–1948 interval. The huge figures also reflect an inflated price level resulting from the preceding war finance. The characteristics here and in the real estate field are strongly reminiscent of what happened during the 1920's, following World War I.

The rising importance of the institutional investor as a buyer of long-term debt of business is shown in both the dollar and percentage figures of the table. Analysis indicates that the increased proportion taken by institutions was largely the result of the expanding holdings of the life insurance companies, which held 37.7 per cent in 1948 as against 6.7 per cent in 1920, 9.6 per cent in 1930, and 19.7 per cent in 1940. The combined holdings of life insurance companies, commercial banks, and mutual savings banks are shown to be 49 per cent in 1948. This percentage is actually an understatement because the amounts shown as held by commercial banks include only bond holdings and omit that part of their term loans that run for more than one year that are included under Loans and Discounts. Because the installments of these term loans that run for more than one year are not reported separately, they could not be included Quite probably the commercial banks' holdings of long-term corporate debt shown in the table would be considerably increased in the later years if the amount of term loans that constituted long-term debt could be ascertained [7]

**Demand for mortgage money in real estate field.** As pointed out earlier, a mortgage is sometimes used to secure bond issues that are sold to the public, but when discussing mortgages as investment media, it is customary to limit the term to indebtedness that is sold in a single unit to a single investor rather than to a mortgage bond issue In this sense, as it is commonly used in the investment world, the bulk of all mortgages are upon residential property Some are on commercial property and probably most of such property is of the general utility type, which can be rented, rather than property suited only for a single occupying owner

Some mortgages, however, are on industrial or commercial property occupied by the owner, and, if rental would be difficult, such debt is very similar to a bond issue in its dependence upon the success of the owner for its final payment It differs from a bond issue in that it is held by a single investor, usually a financial institution Because such borrowers are typically business corporations, the amounts of such mortgages are included in the long-term debt of business Furthermore, it is probable that life insurance companies are the most important buyers of these large mortgages issued by business corporations and are likely to group such mortgages along with their bond issues For these reasons such mortgages by corporations will be left under the long-term corporate debt rather than under the heading of mortgages, although in some statistical series they are found included under the latter heading

Real estate mortgages, like long-term corporate debt, have moved into institutional portfolios The investment characteristics that make this movement logical will appear in the later discussion of that form of investment Financial institutions other than commercial banks increased their share of real estate mortgages from 29 to 47 per cent of the total in the decade of the 1920's In the

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[7] This conclusion is based upon a survey conducted by the Federal Reserve banks, which showed term loans equal to $4 5 million, 34 per cent of the total $13 2 billion of business loans of member banks on Nov 20, 1946 (*Federal Reserve Bulletin*, March, 1947) Possibly two thirds of such loans would represent instalments maturing in more than one year If such a proportion of the $19 billion of loans of all commercial banks at the end of 1948 were such long maturity instalments of term loans, they would have added $4 1/3 billion to the figure shown in the table

NONCORPORATE MORTGAGE DEBT, URBAN AND FARM, AND PERCENTAGES HELD BY LEADING INSTITUTIONS

| | | Proportions held by | | | | |
|---|---|---|---|---|---|---|
| *Year* | *Total (Billions)* | *Life Insurance Companies* | *Mutual Saving Banks* | *Savings & Loan Assns* | *Commercial Banks* | *Total by Institutions* |
| 1920 | $22.1 | 10.0% | 11.8% | 7.7% | | |
| 1925 | 31.3 | 15.3 | 13.7 | 13.4 | | |
| 1930 | 42.1 | 18.0 | 14.2 | 15.2 | | |
| 1935 | 33.5 | 15.8 | 15.5 | 9.8 | 9.8% | 50.9% |
| 1940 | 33.7 | 17.8 | 14.8 | 12.1 | 13.3 | 58.0 |
| 1945 | 32.5 | 20.2 | 13.2 | 16.6 | 14.4 | 64.4 |
| 1948 | 51.5 | 21.1 | 11.0 | 20.2 | 20.7 | 73.1 |

Sources: See the table on page 30. Savings and loan data, 1920–1945, 1947 Statiscal Supplement, *Federal Home Loan Bank Review*, p. 7. 1948: *U.S. Savings and Loan League.*

following five years, 1930–1935, their holdings shrank to 41 per cent. The shrinkage was largely the result of defaults that resulted in an exchange of mortgages on homes and farms, often for a reduced figure, into government-guaranteed bonds of the Home Owners' Loan Corporation and the Federal Farm Mortgage Corporation. These two agencies collected or liquidated their holdings in the succeeding years.

Between 1935 and 1948, the four institutions shown in the table increased their share of the total mortgage supply from one half to three fourths of the total. One of the factors at work was the decreasing importance of the smaller investor who prefers the greater liquidity and freedom from managerial cares of indirect institutional investment as compared with direct investment in bonds and mortgages.[8]

**Government requirements, nature of government borrowing.** The third group of users of the community's savings are the various governmental bodies—the federal government, states and territories, and the many political subdivisions of the state, including counties, cities, villages, and tax districts. Before examining the demand of this group for funds, the social aspects of civil as compared to private borrowing may be reviewed briefly. By far the largest part of private borrowing is undertaken for the purpose of expanding production. Such is not the usual case in civil, or public, borrowing. Currently the bulk of our huge Federal debt represents expenditures made in World War II for which no social capital exists. Even though a social philosopher might argue that the preservation of liberty and our productive way of life is a social good worth such an expenditure, we must, nevertheless, classify such borrowing in the category of consumption loans In contrast are those loans created for such purposes as waterworks or public utilities where not only is social capital created, but also a money income is collected by the community for the benefits that may make such projects financially self-supporting More controversial is the classification of such durables as public buildings, roads, and schools Some are inclined to label such tax-supported ventures as unproductive Such a classification is misleading to say the least Durable projects of this type render useful and wanted services often of a high order of importance They should be regarded as much a part of the capital goods of the nation as those durable goods that are used for the production of money income One of the social advantages of an ample supply of savings available at a low rate of interest is that the community can afford so much more and so much better quality of these government-owned capital goods

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[8] A fuller discussion is given in Guthmann, H. G., "The Movement of Debt to Institutions and Its Implications for the Interest Rate," *Journal of Finance,* March, 1950.

However, as will be seen in the later treatment of civil loans, the distinction between those loans that represent financially self-supporting projects and those that depend upon taxes is a useful one and any increase in the latter will, if it is carried too far, strain the public credit and produce weak and speculative investments

**State and municipal debt** The table that follows shows the supply of domestic state and municipal debt Increases represent the net demand for funds by governments other than the Federal Government The table also shows the proportion held by life insurance companies, commercial banks, and savings banks The institutional holdings were approximately a sixth during the 1920's During the 1930's, the life insurance companies, searching hard for investments, expanded their holdings More significant was the expansion of commercial bank holdings, which resulted from their willingness to purchase short maturities on a very low-yield basis and from the advantage they derived from tax exemption of interest on these bonds Corporate income tax rates began their rise in the 1930's and reached high levels during World War II and after

Holdings of these obligations by the states and municipalities themselves have been excluded from this table to show the net amounts available for public investment State and municipal employee retirement funds have been a growing market factor in this field except during the war and immediate postwar years, when new municipal issues were not available or Federal Government obligations, lacking tax exemption, were to be had at higher

PUBLICLY OWNED STATE AND MUNICIPAL DEBT AND PERCENTAGES HELD BY LEADING INSTITUTIONS

| | | Proportion held by | | | |
|---|---|---|---|---|---|
| *Year* | *Total (Billions)* | *Life Insurance Companies* | *Mutual Savings Banks* | *Commercial Banks* | *Total Institutional Holdings* |
| 1920 | $ 5.9* | 5.1% | 3.4%* | 8.5%* | 16.9% |
| 1925 | 10.0* | 4.0 | 2.0* | 9.0* | 15.0 |
| 1930 | 14.1* | 4.3 | 3.5* | 8.5* | 16.3 |
| 1935 | 16.0* | 6.9 | 5.6* | 16.9 | 29.4 |
| 1940 | 16.5* | 10.9 | 3.6 | 21.8 | 36.4 |
| 1945 | 13.7* | 4.4 | 0.7 | 28.5 | 33.6 |
| 1948 | 16.2* | 3.7 | 0.6 | 34.0 | 38.3 |

* As of June 30.
Sources: As in the table on p. 30. Mutual savings bank data from *Annual Reports of the Comptroller of the Currency*.

yields. In 1948, the volume of self-held state and municipal obligations as for pension funds and the like was $2.5 billion, or 15.4 per cent of the total outstanding.[9]

**The Federal demand for funds.** The accompanying table shows the amount and institutional holdings of the publicly held Federal debt for the period 1920–1948. Most noteworthy is the rise in the size of this debt during World War II, and a comparison with the figures in the preceding tables shows its rise to a dominating position in the investment market since 1940.[10] For the decade prior to World War I, the total indebtedness of our national government ran between $800 and $1,000 million. As a result of the billions spent during that war and the loans made to our Allies, this relatively small figure of a single billion was pushed to a peak of over $26 billion on August 31, 1919. The table shows the substantial repayment of $10 billion or almost 40 per cent during the prosperous 1920's. The depression of the 1930's plus a deliberate policy of deficit financing for the purpose of stimulating employment and business revival, increased the direct interest-bearing debt alone to a figure of over $41 billion or well in excess of the peak figure of the end of the preceding war. This last figure, it will be noted, was of a magnitude comparable to either the long-term business debt or the real estate mortgage total World War II multiplied the net Federal debt figure so greatly that even after some retirement it still constituted a supply of obligations in 1948 of roughly five times the 1940 figure

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[9] Bonnell, E. T., "Public and Private Debt in 1948," *Survey of Current Business*, October, 1949, p. 10.

[10] This table includes, instead of the conventional figure for the total gross direct interest bearing debt of the United States, the amount of government-guaranteed, or indirect, debt as well, and reflects only the *net* portion held by the investing public. The portion that is held by various Federal agencies and trust funds, such as the Old Age and Survivors' Insurance, the servicemen's life insurance reserve fund and similar funds, are excluded. The net figure states the actual demand of the Federal Government upon the investment markets. It would be possible to think of these governmental funds as constituting a part of the demand for funds and state the debt gross. Their investments are limited to Federal obligations and are really parts of the inter-departmental bookkeeping, as it were, of the Federal Government.

PUBLICLY HELD FEDERAL DEBT

| Year | Total (Billions) | Life Insurance Cos [a] | Mutual Savings Banks[a] | Commercial Banks[a] | Federal Reserve Banks[a] | Savings & Loan Assns [b] | Total Institutional Holdings | Savings Bonds Series A–E[c] |
|---|---|---|---|---|---|---|---|---|
| 1920 | $ 23 7 | 3 4% | 3 4*% | 16 0*% | 1 3*% | — | 24 1% | — |
| 1925 | 20 3 | 3 0 | 5 4* | 22 7* | 2 0* | — | 33 0 | — |
| 1930 | 16 5 | 1 8 | 3 0* | 30 3* | 3 6* | — | 38 8 | — |
| 1935 | 34 4 | 8 4 | 4 4* | 36 9* | 7 0* | — | 56 7 | — |
| 1940 | 44 8 | 13 2 | 7 1 | 39 7 | 1 9 | 0 2% | 65 2 | 7 1% |
| 1945 | 252 7 | 8 2 | 4 2 | 35 9 | 9 6 | 1 0 | 58 8 | 13 6 |
| 1948 | 216 5 | 7 7 | 5 3 | 29 0 | 10 8 | 0 7 | 53 6 | 16 0 |

* As of June 30

[a] See the table on page 30

[b] 1940–1945 *Statistical Abstract of the United States*, 1948, p 440 1948 *Federal Reserve Bulletin*, March, 1949, p 246

[c] *Federal Reserve Bulletin*, February, 1941, p 149, January, 1946, p 64, January, 1949, p 55

The rise of the Federal debt cannot be regarded as merely a war phenomenon Since the Great Depression of the 1930's the functions of the Federal government and its budget expenditures have expanded tremendously and show no signs of retreating Amounts spent on veterans' aid, farm price supports, social security, foreign aid, and new military responsibilities are without precedent As a consequence potential surpluses and deficits are likely to make changes in the Federal debt a major investment market influence on a scale previously thought of only in connection with a war effort When the prospect of a deficit of more than $5 billion is accepted for a year of extraordinary prosperity and full employment such as fiscal 1950 and that figure is compared with the annual changes in corporate and real estate debt shown in earlier tables, the potentialities may be better realized During the 1920's, similarly prosperous years were used to reduce Federal debt and prepare governmental finances for the possible strain of bad times

An examination of the distribution of holdings among the various financial institutions shows a different pattern from that shown for other forms of debt The reasons for the differences are more appropriately analyzed later when the investment character of the various kinds of United States obligations and the investment policies of the institutions are studied However, the same general tendency of the share held by the financial institutions to increase is seen here as in the preceding tables The share of this group rose from 24 to 65 per cent between 1920 and 1940, or roughly from one fourth to two thirds Thereafter, the proportion decreased Most of the shrinkage in the proportion is explainable in terms of a new thrift institution created by the Government in the Series E Savings bonds These bonds, available in relatively small denominations, possess many of the characteristics of a savings account with a bank or a savings and loan association A fixed dollar value and a redemption privilege at any time after they have been owned for sixty days make them attractive for the thrifty If this type of Savings bond, sold only to individuals, is regarded as another "institution," the proportion of the publicly held Federal debt "institutionally" amounted to 72 per cent in 1940 and 70 per cent in 1948

**Bank credit expansion as a supply factor** The observant reader will have noted a new institution in this table not found in the preceding ones—namely, the Federal Reserve banks They are often treated statistically, along with the commercial banks, as merely providing part of the supply of funds Economic analysis, however, reveals that the Federal reserve and commercial banks occupy a special and unique position beyond that of the other financial institutions The thrift institutions can only supply funds as they are deposited with them by individual savers They are merely middlemen between investors and borrowers The banking system, however, is able to "manufacture" credit

A genuinely adequate explanation of the credit expansion mechanism is beyond the scope of this chapter But to ignore this point would leave our picture of the supply-demand factors of the capital markets seriously deficient The commercial banking system, if supplied with sufficient free cash reserves, can originate a credit supply A government faced with an insufficient market to absorb the obligations necessary to finance its needs may sell its obligations to the system and take deposit credit, which is not drawn out but merely put into circulation by drawing checks that transfer these expanded deposits to the public The supply of money in its most important form, demand deposits, is increased

The inflationary effect of financing through the expansion of bank credit was recognized by the Treasury and economists during World War II Every effort was made to stimulate saving that would absorb as much of the increased war debt as possible The excess spilled over into the commercial banking system to expand deposits. During the early stages of the war, commercial banks held such considerable excess reserves (deposits with the Federal Reserve banks in excess of legal requirements) that bank credit expansion was possible without special assistance from the central (Federal Reserve) banks Later adequate reserves were assured by the substantial purchases of Government obligations by the Federal Reserve Such purchases created additional deposits that constituted the "cash" or legal reserve balances for the commercial banks However, it should be noted that a major part of the increase from $2 to $24 billion in Federal Reserve holdings of Government obligations between 1940 and 1945 was required to support the expansion of hand-to-hand currency in the form of Federal Reserve notes, which rose from $6 to almost $25 billions However, where a purchase of a dollar of Governments by the central bank creates only a dollar of monetary expansion of its bank notes, it may serve as a reserve base for substantially five dollars of commercial bank deposit expansion

While inflationary pressures were apparent during the war, as in black market prices, the major effects upon the price level were postponed by the strict regulation of prices under the OPA (Office of Price Administration) At the end of the war, the fervor of patriotic self-discipline in observing these controls diminished rapidly and price controls were gradually abandoned Then the price level rose to reflect the expanded money supply The tremendous expansion of production both during and after the war did much to minimize the inflationary consequences of war finance The war economy permitted Americans an unusually high standard of ordinary consumption Afterwards many large industries contributed to the restraint on prices by voluntarily foregoing possible price increases in such fields as steel, automobiles, and petroleum Grey markets indicated some of the latent possibilities of price inflation Industrial leaders feared that if prices rose in a speculative boom there would be an intensification of antibusiness feeling and that a rise in union wage levels might lead to price increases that would be hard to reduce and insupportable in a subsequent deflation The horrible example of extreme inflation and deflation that followed World War I in 1919–1920 created an atmosphere of healthy caution

Any discussion of this process of debt monetization by bank credit expansion would be misleading if certain precautions were not observed in reading the relevant figures

(1) Commercial banks are not only the institutions that provide the major part of our "money," but are also important thrift institutions when they accept savings deposits upon which they pay interest Even though such thrift accounts are highly liquid they should not be thought of as money any more than the liquid sav-

ings invested in mutual savings banks and savings and loan associations. They are merely one of the more liquid forms of investment.

(2) Money itself, whether in the form of currency or demand deposits, may on occasion be held as a form of non-interest-bearing investment, that is, as a "store of value" rather than as "circulating medium." This situation is reflected in figures that show the rate at which deposits are being spent, the conventional deposit turnover (the ratio of debits to the amount of average deposits).

(3) Finally, even though bank credit expansion serves as a "supply of funds" factor in the manner described above, some point out that the resulting increased demand deposits like any other form of property or asset require an act of saving by some individual or corporation for their acquisition. Savings and investment, in this sense, supply and demand, must always balance in the statistics of the market place. Without attempting to pursue the economic subtleties involved we shall only point out here that the immediate effect of bank credit expansion is to make it easier for borrowers to acquire funds and viewed as an "investment" the added supply of cash is peculiar in that as a mere medium of exchange it adds nothing to the real wealth of the community. If the price level rises proportionately to the expansion of the bank credit involved, the "saving" leaves the holders of the supply of cash with the same buying power as before.

**Other supply factors in debt market.** The reader can best picture the magnitude of major demand factors and the part supplied through the institutional channels that have been mentioned in earlier tables by examining the following table.

LONG-TERM DEBT AND INSTITUTIONAL SHARE 1948
(Billions)

| | | *Held by* | |
|---|---|---|---|
| | *Total* | *Institutions* | *Others* |
| Corporate long term debt | $ 49.6 | $ 24.3 | $ 25.3 |
| Real estate mortgages | 51.5 | 37.7 | 13.8 |
| State and municipal | 16.2 | 6.2 | 10.0 |
| Federal direct and guaranteed (net) | 216.5 | 115.5* | 101.0 |
| Totals | $333.8 | $183.7 | $150.1 |

* Excludes Series E bonds

Not all of the share held by "Others" represents individual investment. The chief financial institutions omitted from the "Institutions" category are the fire and marine and the casualty insurance companies. The former had $5.7 and the latter $4.8

billion of assets in 1948. The bulk of the assets in turn represented investments, which are mostly in debt form although some stocks are owned. Substantially half of the investments are Federal obligations. Nonfinancial businesses do not ordinarily hold many investments but during World War II the practice of investing temporarily idle funds in Governments grew tremendously ("Governments" refers here, as in the financial district generally, to the obligations of our *federal* government rather to the whole class of government obligations.) The chief portion was held in anticipation of Federal income taxes. Even in 1948, after their total had dropped by one third as compared with 1945, nonfinancial businesses held $21.7 billion of Governments, of which two thirds belonged to corporations and one third to unincorporated units. Trust funds held by commercial banks as under testamentary trusts or for corporate employee retirement plans might be regarded as an institutional channel. Little is known about such funds save that national banks alone held $20.4 billion for such purposes in 1948. Probably a substantial part of such funds are committed to long-term debt forms of investment.

**Other demand factors in the debt market.** A study of the demand for debt funds shows that the chief remaining demand factors are in the short-term credit field. Some of the short-term credit demand can be ignored here. For example, trade credit, which is extended by one business to another, is largely intrabusiness bookkeeping from our point of view even though vital to the effective functioning of our private enterprise system. Trade credit may be thought of as shifting the burden of financing from the debtor business to the creditor-vendor. Those vendors who stand at the beginning of the credit chain must obtain the money needed to finance the goods now on the shelves of another concern either from bondholders or stockholders or by recourse to the money market, as by bank loans. At the other end of the credit chain will be the retailers who, as a class, have the most difficulty in financing and are the most important recipients of trade credit. The credits they obtain may, in turn, support credit to consumers.

Consumer credit may be in the form of simple charge accounts, or book credit. If the sale is for a substantial amount, as for an automobile, a household appliance, or furniture, the consumer may give formal instalment notes. Consumer instalment paper, because of its financial magnitude and extended period of payment, is not likely to be supportable through trade credit, but will have to be carried through some financial institution. Much of this paper is handled by finance companies that specialize in lending on instalment notes The bulk of their funds, probably about three fourths, is, in turn, obtained from bank borrowing The alternative is for the retailer to do his own borrowing directly at a commercial bank An idea of the importance of this form of credit may be had from the fact that 9 per cent of all retail sales, or $11 4 of the $130 billion total in 1948, was on an instalment basis[11] Charge sales were 20 per cent of the total and ran to $26 6 billion

Consumer credit, then, does not impinge directly upon the long-term debt market but is financed mostly through the commercial banks However, both trade and consumer credit may in part be financed through the investment of either bond- or stockholders in the credit-granting business or by indirection through the financing of those business corporations that occupy a primary position at the head of the chain of trade credit The volume of short-term bank credit in its relation to other "demand" factors in the long-term credit field may be judged from the table of the Loans and Discounts, other than real estate loans, reported by all insured commercial banks at the end of 1948[12]

SHORT TERM LENDING BY COMMERCIAL BANKS 1948

(Billions)

| | |
|---|---|
| Commercial loans | $18 8 |
| Consumer credit | 6 8 |
| Agricultural loans | 2 8 |
| Security, or collateral, loans | 2 3 |
| Other loans | 1 1 |
| Total | $31 8 |

Loans by commercial banks represent funds derived from demand deposits, time deposits, and the bank stockholders, in that order of importance Demand deposits (adjusted to exclude interbank and Government deposits, and cash items in the process of collection) totalled $84 billion, time deposits $35 billion, and stockholders' capital accounts $10 billion in 1948 The commercial banking system, as a whole, tends to invest its demand deposits in Loans and Discounts and short-term Governments after setting aside cash reserves of approximately one fourth, time deposits and stockholder funds tend to flow into real estate loans and medium- and long-term bonds

**The stock market** The stock market is the meeting place for the supply and demand for ownership capital in the corporate field The corresponding ownership fraction of real estate, which complements the mortgage debt field, is often referred to as "real estate equities." Although governmental bodies finance exclusively through debt, they do come to own properties that represent a surplus of value over debt incurred as the latter is retired, for such things as electric and water utilities, public buildings, and highways. Since their financing is always through debt, any equities in government property must represent government savings, that is, taxes or service charges in excess of current expenses. For this third field of ownership we find no satisfactory accounting or statistics.

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[11] *Federal Reserve Bulletin*, June, 1949, p 657

[12] *Ibid*, May, 1949, p 542

To study the meeting of supply and demand in the field of business ownership, the volume of stock offerings of those corporations large enough to appear in statistical summaries are given in the table. Only *new* capital issues are included, issues sold to refinance old securities are omitted.

NEW CAPITAL ISSUES OF DOMESTIC CORPORATIONS AND RETAINED EARNINGS AS SOURCES OF CORPORATE FUNDS

(Millions of Dollars)

| | *1* | *2* | *3* | *4* |
|---|---|---|---|---|
| *Year* | *Common Stocks* | *Preferred Stocks* | *Bonds and Notes* | *Retained Corp. Earnings* |
| 1937 | 203 | 205 | 817 | − 8 |
| 1938 | 19 | 48 | 807 | − 906 |
| 1939 | 71 | 26 | 287 | 1,209 |
| 1940 | 71 | 61 | 601 | 2,398 |
| 1941 | 79 | 94 | 889 | 4,921 |
| 1942 | 16 | 103 | 506 | 5,136 |
| 1943 | 37 | 55 | 284 | 6,153 |
| 1944 | 91 | 133 | 427 | 6,128 |
| 1945 | 226 | 430 | 607 | 3,803 |
| 1946 | 730 | 742 | 2,084 | 8,132 |
| 1947 | 623 | 599 | 3,572 | 12,073 |
| 1948 | 477 | 432 | 4,748 | 13,242 |

Source: Columns 1–3, *Commercial & Financial Chronicle*, Column 4, Department of Commerce, *Survey of Current Business*.

In the unincorporated business, ownership funds must ordinarily come from the one or very few owners and any retained earnings. When business seeks ownership funds from outside of the owner-operators, the corporate form of organization becomes necessary as a rule to induce investor funds. Those who are outside the business demand limited liability, a readily transferable interest, and a permanent organization such as they can get in corporation stock.[13]

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[13] For a fuller discussion of the corporate form of organization in raising business funds, see Chapter 2 in *Corporate Financial Policy* by Guthmann, H. G., and Dougall, H. E. (New York: Prentice Hall Inc., 2nd ed., 1948).

Common stock offerings ($2.6 billion) during the twelve-year period shown in the table amounted to only 17 per cent of the long-term debt financing ($15.6 billion) and combined common and preferred stocks ($5.5 billion) were only 35 per cent. Some have used these figures to demonstrate a lack of an adequate supply of ownership capital, often ignoring the large sums that the common stockholders invest by leaving earnings in the business. Whereas long-run debt supplied about three times as much new funds as did stock issues during the twelve-year period 1937–1948, retained earnings of $62 billion were three times as large as the $21 billion of bond and stock issues combined.[14] This supply of funds has the economic advantage of making growth easiest for those concerns with the best earnings, that is, the concerns whose earnings indicate either economic need for capital or efficient low costs in meeting the demand for its goods or services.

Even these figures tend to overstate the part debt plays in supplying corporate business funds. Most indebtedness is being constantly reduced by repayments, so that the *net* demand upon the investment markets is much less than the total of new debt issues. In contrast, preferred stocks are often treated as permanent financing and common stocks are reduced only rarely by repurchase from corporate funds. In recent years, businesses have found debt especially attractive as the immediate means of raising needed funds because of very low interest rates. This debt can subsequently be repaid with the added earnings from the new property and with the recovery of funds from both new and old fixed property through sums collected from customers for depreciation. Sometimes purchasers of bonds and preferred stocks are given the privilege of converting into common stock. Such equity capital obtained by indirection is not reflected in statistics of new capital offerings.

Because common stocks fluctuate greatly in price, individuals, rather than the great financial institutions with their fixed dollar obligations, are the customary buyers. Only the investment companies, which are relatively young and small, are institutional middlemen devoted primarily to channeling the savings of individuals into the common stock field. The bulk of all common stocks are directly owned by individuals.

Some have believed that common stocks are chiefly owned by the rich. Nevertheless, one survey has estimated that common stocks are owned by some 6 million individuals, living in some 4 million family spending units.[15] The latter would constitute about 8 per cent of all spending units. This study, however, was based on only a small sample, some 3500 units, and others have estimated the number as between 15 and 16 million stockholders.[16] This latter figure would be three times as large as the number of farm proprietors.

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[14] A substantial part of these retained earnings represented the froth of inflation, but even so were welcome as making good much of the losses of inflation where bondholders suffered an outright shrinkage in their claims on real wealth.

Another picture of distribution of the benefits of security ownership may be had from data published by the Treasury Department compiled from income tax returns for 1947. The figures show that 22 per cent of all dividends and interest are reported by those who stated their income as $5,000 or less. This same income group reported the receipt of 45 per cent of all rental income and 82 per cent of salaries and wages. Because of the tendency of this group to omit small amounts of interest, dividends, and rents received because of a lack of audit, these figures probably understate their share. A small average omission by this most numerous class of taxpayers as well as those who are not required to make a return (for example, those who have retired on an income less than the exemption) could make a substantial increase in the share of the lower income groups.[17]

PERCENTAGE DISTRIBUTION OF SEVERAL KINDS OF INCOME AMONG INDIVIDUALS BY INCOME CLASSES, 1947

| | *Total Income Reported by Taxpayer* | | | |
|---|---|---|---|---|
| *Kind of Income* | *Under $5,000* | *$5,000–10,000* | *$10,000–25,000* | *Over $25,000* |
| Dividends and Interest | 22.4% | 15.7% | 22.3% | 39.7% |
| Rentals | 45.5 | 20.9 | 18.9 | 14.6 |
| Salaries and Wages | 81.8 | 11.1 | 4.5 | 2.6 |

Source: Compiled from Treasury Department release, Nov. 25, 1949, p. 8 (No. 5–2171).

The income shares shown are before income taxes, which are extremely high upon large personal incomes. Because so much less is left for reinvestment from incomes of the well-to-do, more reliance upon persons with lower incomes as a source of funds seems likely as time passes. Increasing wealth among all classes makes this a practical possibility. More and more persons of moderate means seeking to supplement retirement pensions with investment income are likely to be attracted by the higher return on stocks than on debt investments. As we shall see later, investment in common stocks and real estate also offers the individual some hope of rising income to protect him against inflation, an advantage lacking in debt investment.

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[15] Survey of Consumer Finances made for the Federal Reserve Board, *Federal Reserve Bulletin, October*, 1949. "Attitudes of the Public Toward Owning Securities" are discussed by Dr. Rensis Likert of the University of Michigan, director of the Survey, in the Investment Bankers Association's *Public Education Bulletin*, January, 1950, pp. 12–17.

[16] Hooper, L. O., "Who Holds America's Stocks?" *The Exchange*, May, 1948, pp. 6–7.

[17] For a fuller study based on 1944, showing a larger share of interest and dividends for the lower income group, see *The National Income and Its Distribution* by the Bureau of Economic Research, University of Notre Dame (South Bend, Ind.: The Bureau, 1947).

The importance of personal income taxes (Federal only) in reducing the amounts left for personal spending and investment should be emphasized for its importance to the outlook for the supply of capital. Personal incomes as they are reduced by Uncle Sam's "sharing" in the form of personal income taxes alone (1949 rates) are as follows:

PERSONAL INCOMES BEFORE AND AFTER FEDERAL INCOME TAXES (1949)

| | *Remainder after Tax** | | | |
|---|---|---|---|---|
| *Income* | *Single Person* | | *Married Couple* | |
| $ 5,000 | $ 4,300 | 86.0% | $ 4,452 | 89.0% |
| 10,000 | 8,176 | 81.8 | 8,600 | 86.0 |
| 25,000 | 16,919 | 67.7 | 19,457 | 77.8 |
| 100,000 | 42,003 | 42.0 | 54,231 | 54.2 |
| 200,000 | 62,040 | 31.0 | 83,241 | 41.6 |

* No dependents assumed.

In contrast to the 1949 situation, where the highest income tax rate took over 82 per cent of any income in the highest bracket and left the taxpayer only 18 cents, the highest rate in 1930 took only 25 per cent of the highest bracket of income.[18]

**Real estate equity capital.** Residential property occupies the center and most of the rest of the real estate investment stage because the acquisition of real estate used for public purposes is financed by governmental borrowing and most business property through the general financing of business units. In any case buildings used for residential purposes are the most important segment of real estate values. The need for funds to finance this field is reflected in the markets for mortgages and for real estate equities.

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[18] Inflation has the effect of lifting incomes into higher dollar brackets so that it has been impossible for salary and dividend increases to keep pace with the rising cost of living *and* taxes. The Foundation for Economic Education, Inc., compares Ted Williams reported $125,000 salary in 1950 with Babe Ruth's $80,000 in 1931. Williams keeps $62,028 after taxes, Ruth kept $68,535. After allowing for shrinkage in the buying power of dollars, Williams net take-home pay would buy only 57 per cent of that of Ruth.

The number of nonfarm housing units, their increase since 1930, and the extent to which they are occupied by owners are reflected in the accompanying table.

HOME OWNERSHIP AND TENANCY IN NONFARM AREAS OF THE UNITED STATES
1920, 1930, 1940, and 1947
(Thousands)

| *Year* | *Total* | *Owning Own Homes* | *Tenant Families* | *Percentage of Families owning Own Homes To Total* |
|---|---|---|---|---|
| 1920 | 17,229 | 7,041 | 10,188 | 40.9% |
| 1930 | 22,855 | 10,503 | 12,352 | 46.0 |
| 1940 | 27,666 | 11,358 | 16,307 | 41.1 |
| 1947 | 32,354 | 17,025 | 15,329 | 52.6 |

Source: U.S. Department of Commerce, "Historical Statistics of the United States, 1789–1945," p. 174, for the years 1920, 1930, and 1940. Bureau of the Census, "Current Population Reports Housing," Series P-70, No. 1, p. 9 (October 29, 1947) for the year 1947.

The rise in home ownership after World War II was partly the result of new building but also of economic pressure upon persons seeking a place to live who were obliged to become owners but who would ordinarily have preferred to rent. Rent controls by freezing rents at an artificially low level made sale the only method whereby a landlord could realize the going market value of his property. Controls also enabled many persons to occupy more rental space than they otherwise could have afforded, thereby shrinking the supply of housing for those not already occupying places, such as the returned veterans and newly-married couples. The housing shortage had its "natural" causes in the low building rate during the 1930's and the War, and in the rapid increase in the number of family units at the end of the War.

At the beginning of 1949 some 20 million nonfarm families were estimated as occupying their own homes worth an aggregate value of $180 billion at an average figure of $9,100.[10] Some 45 per cent of these properties were mortgaged for an average of $3,700, or an aggregate of approximately $32 billion, leaving the value of the ownership equities amounting to $148 billion. The unmortgaged dwelling would represent chiefly the houses owned by the older families that had bought in the more distant past and finished paying off the mortgage. In contrast, would be the newer homes often bought with a minimum down payment under the liberal loan provisions of mortgages insured by the Federal Housing Administration or the Veterans' Administration.

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[10] "1949 Survey of Consumer Finances," *Federal Reserve Bulletin*, September, 1949, p. 1045.

An interesting sidelight on the widespread distribution of home ownership among all income classes is found in the figures showing the per cent of nonfarm families owning their own homes in the different income groups in 1949

| *Family Income* | *Per Cent Owning Homes* |
|---|---|
| Under $1,000 | 46% |
| $1,000–$1,999 | 34 |
| 2,000– 2,999 | 43 |
| 3,000– 3,999 | 49 |
| 4,000– 4,999 | 58 |
| 5,000– 7,499 | 63 |
| 7,500 and over | 73 |

Source "1949 Survey of Consumer Finances," *Federal Reserve Bulletin*, September, 1949, p 1040

Probably one explanation of the relatively high proportion of home ownership in the lowest income group is that a large number of older, retired persons who own their own homes fall into that group Among retired heads of families, 60 per cent owned their own homes Such persons often add to their small income by renting rooms

In the absence of figures on the amounts invested in rental housing, we can only note that about an equal number of nonfarm families occupy rental housing as live in their own homes Such figures as are available on rentals of such property suggest the value of such property is less than amounts given above for owner-occupied property Most single-family dwellings are probably built originally for owner-occupancy As they grow older, there is probably a tendency for them to drift into rental occupancy In such "second-hand" housing, many persons acquire less expensive shelter, much as many enjoy low-cost transportation from secondhand automobiles Figures on the value of rental housing are lacking

Multi-family dwellings in our larger cities are built only when rentals are high enough to provide the hope of a fair return upon construction cost During the 1920's such building flourished Often the whole cost of actual construction was financed by real estate bond issues Appraised valuations were characteristically based upon high rental estimates and were higher than total construction costs, so that bond issues purported to amount to only a conventional two thirds of the valuation Bond issues on apartment buildings and also hotels and some business property rose from $160 million in 1922 to $696 million in 1925 [20] In the four succeeding years flotations ran around $700 million annually[21] In 1929 the total dropped to a half billion and in the following decade to a nominal figure

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[20] *Commercial and Financial Chronicle*, 123, 2087

To encourage a renewal of apartment-building, loans of 90 per cent have been guaranteed by the Federal Housing Administration in recent years Such loans are reported in some instances to be sufficient to cover all costs save for the land and contractor's profit Consequently they are subject to some of the same hazards as the real estate bond issues of the 1920's (1) possible stimulation of building to the point of inflating construction costs, (2) losses of market value in the event of lower construction costs or a general price level deflation, and (3) loss of equity value where annual depreciation exceeds the rate of debt repayment

While the interest of individuals in home ownership has been sufficient to generate a satisfactory volume of equity funds necessary to make the down payment for the purchase of a new home, the situation has become different in the field of multi-family dwellings built as rental housing The problem was met during the 1920's in large part by the high per cent loans available so that little or no equity cash was required However, people of means have always found urban real estate ownership attractive in the past and were willing to assume the risks of ownership While conclusive evidence is lacking, some signs point to a reduced interest in recent years Some possible explanations would be (1) reduced sums available for such investment because of greatly increased personal income taxes for persons of means, (2) a wish to avoid unliquid real estate holdings, which might be hard to value and difficult to liquidate to meet estate and inheritance taxes in the event of death, as compared with marketable securities, and (3) a fear of unprofitable investment because of (a) increasing competition from subsidized public housing and (b) harsh restrictions upon earnings under rent control laws If equity financing is to attract a broader market it should be arranged to fit the purse of the growing army of middle-class investors Thus far financing by the use of common stock, a convenient method of breaking an equity up into units conveniently small for investment, has not been widespread

Farm property is another major field of values It rests somewhere between business and real estate in economic character. The bulk of property values is in the form of land and buildings, chiefly the former With the passing decades a larger share of investment has taken the form of machinery and livestock Much of the change in the total value figures reflects the fluctuation of land values rather than changes in the demand for capital as would capital improvements The figures shown in the table suggest that most of the investment in this field is ownership and probably represents personal saving, except where it represents price fluctuation Credit plays a part in the investment in the form of farm mortgages and other credit, which is mostly commercial bank credit

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[21] *Proceedings of the Nineteenth Annual Convention, Investment Bankers Association of America,* 1930, Report of the Real Estate Securities Committee, p 260

VALUE OF FARM PROPERTY AND DEBT
(Millions of Dollars)

| *Property* | *1949* | *1945* | *1940* | *1930* | *1920* | *1910* |
|---|---|---|---|---|---|---|
| Real estate | 65,168 | 46,389 | 33,612 | 47,880 | 66,316 | 34,801 |
| Other | 25,771 | 15,126 | 8,251 | 10,498 | 14,011 | 7,160 |
| Total | 90,939 | 61,515 | 41,893 | 58,378 | 80,327 | 41,961 |
| *Debt* | | | | | | |
| Farm mortgage | 5 108 | 4,933 | 6,586 | 9,631 | 8,449 | 3,208 |
| Other | 2,714 | 1,622 | 1,504 | 2,385 | 3,872 | 1,236 |
| Total | 7,822 | 6,555 | 8,090 | 12,016 | 12,321 | 4,441 |

Source Department of Agriculture, Bureau of Agricultural Economics for 1910–1930 data *Net Farm Income and Parity Report*, 1943, p 29, 1940, 1948 *Agricultural Finance Review*, November 1949, Table 30

The decline in values during the decade of the 1920's was largely the aftermath of inflation during and immediately after World War I, that reached its peak in 1920 Thereafter, prices of farm products fell and farm population shrank during a decade when prosperity was general and total population was rising The depression of the 1930's affected the figures for agriculture and business alike During World War II, prosperity returned for the farmer, production expanded, and prices rose Marked price inflation in the immediate postwar years continued the process of lifting totals, so that the total value of all farm property, which had been but $42 billion in 1940 and $62 billion in 1945, reached $91 billion in 1949, a figure exceeding the 1920 level

The larger part of farm property values is in land and buildings, but the relative importance of livestock and farm machinery, the chief other assets, has grown From a figure equal to 21 per cent of the real estate values in 1910, their value has grown to almost 40 per cent in 1949

The demand for agricultural capital is seen in the rise of the farm debt figure, which almost tripled between 1910 and 1920 Since then, the shrinkage has been almost without interruption until it totals only about one-half more than in 1910 in spite of a much higher price level Most of the farm debt is long-term mortgage debt In 1949 it constituted $5 1 of the $7 8 billion total The balance of debt, which is short-term, is supplied largely by Federal farm lending agencies and by commercial banks [22]

**Capital demand from foreign countries** The demand for funds by foreign governments and business corporations, although a distinctly minor element in the investment picture, should be mentioned to make our picture complete Prior to World War I, the United States was a borrower rather than a lender in the world financial markets Much of the money to build our railroads, the chief demand factor in the capital markets of the period, came from abroad, mostly from English and Dutch sources After that the situation was reversed Nearly all the major European nations were impoverished by World War I The struggle resulted in an enormous loss of capital With business disrupted, incomes shrunken, and currencies inflated, loans were needed during the 1920's The United States, in contrast, was outside of the arena of actual destruction, and, in spite of huge war expenditures, had its capital equipment in good shape to go on with increasing production and expanded national income

In 1914, this country had about $1 5 billion invested abroad but foreigners had claims against us aggregating about $4 billion [23] During World War I, some of these claims were sold back to us and our allies incurred some $10 billion of war debts to our Federal Government In some years during the 1920's, foreign capital flotations, chiefly by governments, exceeded a billion dollars A discussion of these obligations and their subsequent record is deferred to Chapter 21 We shall only note here that subsequent defaults created such an unfavorable credit situation that direct lending, save to a very few like our Canadian neighbors, has shrunk to a nominal amount Such foreign loans as have been made in recent years have usually been made by agencies of our Federal Government, like the Export-Import Bank, or by international organizations that have received American funds from our Federal Treasury, like the International Bank for Reconstruction and Development

American business corporations, however, have continued the capital movement abroad, initiated during the 1920's, where conditions permit Sometimes branch factories or assembly plants are located in foreign countries, or rich natural resources, such as petroleum in Venezuela and the Middle East, are developed Such capital demand is felt in the investment market only indirectly, since the domestic business corporations concerned generally use funds from their own corporate treasury Only a minor part of foreign corporation securities is offered directly to the American investor Foreign assets typically represent a partial support of the stocks and bonds of domestic corporations, such as Standard Oil Company of New Jersey, Texas Company, Armour and Company, and International Harvester Company

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[22] Debt guaranteed by the Commodity Credit Corporation is omitted since the farmer may cancel it by surrender of the pledged farm products It is a price supporting device rather than a normal loan Estimates of debt to merchants and miscellaneous lenders have been available in recent years but these too have been omitted here

[23] *Commercial and Financial Chronicle,* 123 2088

**Summary.** The material in this chapter is intended to give the reader an idea of the magnitude of the various demands for investor savings by business, by real estate, and by governments The distinction between debt and ownership investment is also important The supply of funds that is invested in bonds and real estate mortgages is shown to be flowing more and more through the channels of our financial institutions rather than directly from the individual saver The life insurance company, the commercial and savings banks, and the savings and loans associations have grown both absolutely and relatively with an apparent rise in the relative importance of savings from the low and middle income groups

In spite of the rise of the investment company, ownership investment in both common stocks and real estate is made chiefly by individuals directly. Although complaints are heard that the supply of equity money for business corporations is inadequate, the actual facts of large growth of corporate capital through retained earnings and a parallel expansion in the production of goods and services would indicate that the problem has been reasonably well met from the social point of view The supply of funds for real estate has been sufficient since the end of World War II to produce a huge volume of construction However, a heavy dependence upon high-ratio mortgage loans insured by government agencies has raised the question by some thoughtful observers as to the adequacy of present institutional devices for channeling a reasonable portion of individual savings into ownership investment in the field of large urban multi-family dwellings The huge volume of individual savings would argue that the problem is not one of a supply of investor funds but rather one of their being directed, plus that of making the field reasonably attractive for investment

An appreciation of the social value of private thrift should include both the contribution that capital makes when employed to build factories, utilities, housing, highways, and schools and the personal security to the saver in provision for emergencies and old age retirement Security built by the individual's own efforts should have as much to commend it as that dependent upon taxation Its flexibility to meet the special needs of the individual family make personal investment an invaluable complement to a general and standardized scheme of social security For those who believe in the maximum development of the individual's initiative and freedom of economic choice and a minimum of governmental effort in the fields of production and the direction of the individual's life, our institutions of investment and saving are an important and integral part of an economic way of life It is, of course, possible that our institutions might be gradually converted into a sector of a socialistic state, that is, one in which the government became the sole owner and producer of goods and services and so became responsible for the care of savings and their direction into either production or current spending For those who believe that the ownership and control of all business by a single giant monopoly, even if the monopolist were the government, would be most undesirable, the rising tide of government debt in peacetime, the growth of public ownership in such important fields as electric power and housing, and growing controls in agriculture have created a mounting concern These matters have a significant bearing as background for the work of investment but their full discussion goes beyond the scope of this text.

# 3

# The Instruments of Investment

As we turn from the outline of the investment market drawn in the preceding chapter to the more immediate problem of specific investments, our attention turns naturally to the contract or "security" in which the investor makes his commitment Many readers will already be familiar with various details and aspects of stocks and bonds as contracts from previous studies of corporation finance, business law, and accounting, which are regarded as fundamental for investment work An appropriate treatment here will be a review of those aspects of the various instruments, or contracts, that need particular emphasis from the investor's point of view

**Creditor vs. owner.** The preceding chapter has already suggested the division of investment contracts into the creditor and the ownership classifications Under the typical credit arrangement, the investor receives a bond or a mortgage or other promise to pay a fixed principal sum of money at some future date, and in the meantime a stipulated, fixed rate of income in the form of interest [1]

Failure to pay either interest or principal on the dates stipulated in the contract constitutes a default If the debtor is an individual or a business corporation, his assets may be seized by the creditors and used to satisfy their claim in full before the owners can receive a penny

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[1] Because contracts are written by human beings who vary in skill and in their knowledge of the law and financial customs, and because they are sometimes framed with reference to unusual situations, almost any definition will have some exceptions So we find a very few bonds that have no maturity date, like the perpetual British Consols and French Rentes, and bonds whose interest may be postponed, if unearned, which are known as income bonds See Guthmann & Dougall, *Corporate Financial Policy,* Chapters 6–8 for fuller discussion of these exceptions (New York Prentice-Hall Inc, 2d ed 1948)

Owners, on the other hand, have no fixed claim, but have a right to whatever residual of property or income is left over after claims of creditors are met This is true whether the owner holds an equity in a piece of real estate on which there is a mortgage debt, or shares in a corporation whose assets are subject to the claims of the creditors Because property values and income are typically fluctuating for most real estate and business corporations, the residual claim of the real estate owner and stockholder will fluctuate in value, as will the income, although the variations may sometimes be great, sometimes small

The reader familiar with financial instruments will object at this point that preferred stocks do not conform to this general picture of ownership even though they are legally an ownership instrument Preferred stock does resemble a credit instrument on the two most important points to the investor (1) its claim to income is a fixed amount, or rate, rather than a variable residual such as the ordinary owner of real estate or an ordinary stockholder receives, and (2) in case of dissolution of the corporation, preferred stockholders are usually repaid a stipulated sum for their principal claim, before anything is paid to holders of common stock Because of these two points, a few writers have gone so far as to call preferred stock a "quasi-credit instrument" Such usage is apt to be more confusing than clarifying because preferred stock does have important characteristics on the ownership side The stipulated rate of dividend does not have to be paid promptly in order to avoid default and bankruptcy In fact, directors can defer the dividend even where there are earnings sufficient to pay preferred dividends, if, in their opinion, the needs of the corporation require it Actually, directors usually make an effort to pay preferred dividends in order to maintain the general standing and credit of the corporation Nevertheless, the situation is quite unlike that of a credit instrument, interest upon which must be paid from whatever cash resources are available and regardless of whether current earnings are sufficient if the corporate solvency is to be maintained Again, the preferred stock owner's claim to both income and principal is subordinate to all claims of creditors, even though it outranks the claims of the ordinary, or common, stockholders as a general rule Moreover, preferred stock, unlike debt, has no maturity but runs in perpetuity The corporation may agree to set aside sums for its regular repurchase To facilitate such requirements, the provision is often included in a preferred stock agreement that states a price at which the issuing corporation may call in its preferred stock and pay it off Failure to keep up sinking fund payments does not constitute a default however, as it might in the case of debt Finally, preferred stock will, unless specific provision is made to the contrary, have one other characteristic of ownership, namely the right to share in control by voting at the annual meetings for directors In practice, this right is often waived or made contingent upon the failure of the corporation to keep up the regular dividend

Faced with a practical investment decision, the investor may ask whether preferred stocks are more properly classified as debt or stock from his point of view The correct answer is that a realistic investment classification should be based upon a qualitative analysis of the probable future income pattern of a particular preferred stock, rather than upon the formal legal terms of the instrument Some preferreds, issued by corporations that have followed a consistent policy of avoiding debt, yet maintaining such stability of corporate income that any preferred dividend obligation is likely to be paid even in depression years, are more bonds than stocks from the point of view of either the investor or the economist However, preferred stocks are usually issued by corporations that feel some doubt of the financial wisdom of using debt to meet their particular needs Consequently, *as a class,* preferred stocks should be expected to have a less satisfactory record of dividend regularity than the interest on bonds Indeed, some ill-starred corporations have been unable to pay any dividends on their preferred stock for a number of years, and their claim for dividends accumulates The point is finally reached where the prospect is that the preferred will be entitled to all the income expected to be available for dividends for the indefinite future Then the preferred stock becomes the equivalent of a common stock from an investment point of view, that is, the recipient of all residual income that seems likely to be paid out

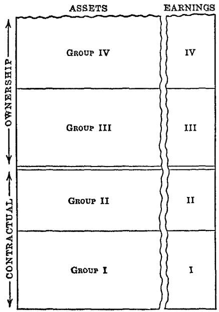
The discussion of what some regard as a "hybrid" security, that is, a cross between a bond and a stock, is valuable at this point in emphasizing a matter that the investor should keep in mind at all times because of its central importance Throughout the discussion in this chapter, we are treating the *legal* form of contract, but *investment reality* must always go beyond the form The important thing about an investment security is not its legal form *but the probable future pattern of income that investors will derive from it.* We shall find some bonds that have been the practical equivalent of weak common stocks, while on the other hand, some common stocks have shown remarkable stability in their dividend payments This fact is of first rate importance in explaining why such a large portion of every investment textbook is devoted to the analysis of the various kinds of investments Such work has for its objective the development of an ability to form a qualitative judgment about investments with primary emphasis upon the probable future income pattern

This preliminary discussion is set up in simple terms of basic differences between investments made as a creditor and as an owner Preferred stock appears to offer an intermediate form of contract that in *intent* at the time of issuance is more creditor-like than ownership-like in character because of the stipulation for a fixed income and principal value In practical performance, preferred stocks vary from income records resembling bonds of good quality to that of common stock of the most speculative quality But this apparent anomaly of the difference between legal form and practical performance is not limited to preferred stocks, as may be seen from the variable record of some credit instruments Some classes of creditor forms of investment have a very inferior record as we shall see in our subsequent study These qualitative differences (1) may result from differences in the stability of the income of the debtors, (2) may result from differences in the relative amount of debt assumed, or (3) may be the result of a single debtor assuming more than one kind of debt and the later debt having a less satisfactory quality

**Varieties of debts.** A corporation might create two layers of debt, one of which would take precedence over the other in the event that difficulties arose in meeting either interest or principal Such precedence is quite frequently created by the use of a first mortgage and a second mortgage, or merely by giving a first mortgage to one group of bondholders and no specific security to a second group

Any first mortgage bonds will be known as senior, or underlying, obligations (underlying because "closer to the property"); the second mortgage or unsecured debt as junior, or overlying, obligations When a bond lacks a specific lien or mortgage it is known as a debenture bond

What has just been said may be shown graphically as in Figure 1. The purpose of Figure 1 is merely to indicate the manner in which a corporation may devise means of financing that appeal to the varied requirements of investors in respect to income and risk The rate of return promised to investors who insist on the first claim is the lowest, but the best secured Those who require less security and who are willing to accept a position subordinate to Group I are entitled to a somewhat higher return on their funds Nevertheless, investors in both these groups are relieved so far as



IV. **Common stocks.** Residual claim against earnings and assets after all other claims satisfied. Characterized by irregularity, highest risk, and voting control. Purchased for participation in profits and control. Require constant care. Return may be high, but uncertain.

III. **Preferred stocks.** Contingent prior claim against earnings (and assets) in return for limitation as to amount. Dividends more regular than on common, but depend solely on earnings. Usually lack full voting control. Moderate risk and higher return than on bonds.

II. **Junior bonds.** Unsecured or junior claim against earnings and assets. Moderate care required and some risk involved. Return regular and somewhat higher than on underlying bonds. Protected by subsequent equities.

I. **Underlying bonds.** First claim against assets and earnings. Protected by succeeding equities. Greatest security of principal and regularity of income. Lowest return of all corporation securities. Marked by freedom from care and risk. Bought solely for investment purposes.

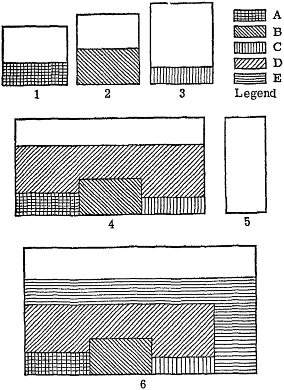
Figure 1. Chart Showing Priorities of Various Corporate Securities Against Income and Assets and Their Order of Risk

possible from all uncertainty regarding the amount of income they will receive, in that they have committed their funds to the enterprise on the basis of a definite creditor contract.

Above the double line are indicated the claims of the stockholders. The nature of their claims differs fundamentally from that of the bondholders in that it represents a participation in profits. In fact, the stockholders may not receive any return at all if earnings do not justify the payment of dividends. In order to meet the requirements of those who prefer to receive a constant income rather than take a chance on receiving large profits during good years and low profits during poor years, a preference may be established among the owners of the corporation. By issuing preferred shares to which a prior claim on *profits* is allocated, there is a reduction in risk on one group. On the other hand, except in a few special cases, this is accompanied by a restriction on dividends to a stated amount, as well as a restriction on participation in assets in case of dissolution. Moreover, the payment of preferred stock dividends depends not upon contract but upon the action of the directors.

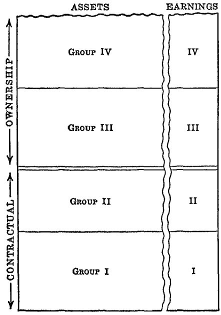
**Varieties of liens.** The tendency in recent years has been toward simplicity in debt arrangement. The variety of liens is tending to disappear even in the railroad field where formerly it was most prominent A single large bond issue secured by a first mortgage or with no specific lien at all has become the common and desirable standard of debt financing It is easy to understand, requires no elaborate analysis, and reduces complications in the event of insolvency Because some complex debt systems still remain, notably among the railroads, an illustration of their creation will be useful

Figure 2 (below) illustrates a situation typical in railroad history Let us assume that three companies, 1, 2, and 3, were organized in the same kind of business at different times, and, in the course of growth, placed mortgages *A, B,* and *C* upon their respective properties, and that they then consolidated into Company 4, the consolidated properties being valued at a figure somewhat in excess of the separate values of the three companies Later, Company 4 placed mortgage *D* on its property Then corporation 6 was organized as a consolidation of Company 4 and



*Adapted from Gustenberg, C W, "Financial Organization and Management of Business" (Prentice-Hall New York, 3rd rev ed, 1951)*

**Figure 2** Methods by which Successive Mortgages are Imposed on Consolidated Properties.



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II. **Junior bonds.** Unsecured or junior claim against earnings and assets Moderate care required and some risk involved Return regular and somewhat higher than on underlying bonds Protected by subsequent equities

I. **Underlying bonds** First claim against assets and earnings Protected by succeeding equities Greatest security of principal and regularity of income Lowest return of all corporation securities Marked by freedom from care and risk Bought solely for investment purposes

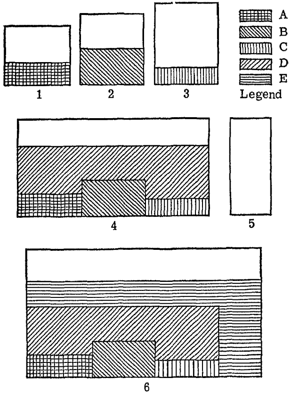
Figure 1 Chart Showing Priorities of Various Corporate Securities Against Income and Assets and Their Order of Risk

possible from all uncertainty regarding the amount of income they will receive, in that they have committed their funds to the enterprise on the basis of a definite creditor contract

Above the double line are indicated the claims of the stockholders · The nature of their claims differs fundamentally from that of the bondholders in that it represents a participation in profits In fact, the stockholders may not receive any return at all if earnings do not justify the payment of dividends In order to meet the requirements of those who prefer to receive a constant income rather than take a chance on receiving large profits during good years and low profits during poor years, a preference may be established among the owners of the corporation By issuing preferred shares to which a prior claim on *profits* is allocated, there is a reduction in risk on one group On the other hand, except in a few special cases, this is accompanied by a restriction on dividends to a stated amount, as well as a restriction on participation in assets in case of dissolution Moreover, the payment of preferred stock dividends depends not upon contract but upon the action of the directors

**Varieties of liens** The tendency in recent years has been toward simplicity in debt arrangement The variety of liens is tending to disappear even in the railroad field where formerly it was most prominent A single large bond issue secured by a first mortgage or with no specific lien at all has become the common and desirable standard of debt financing It is easy to understand, requires no elaborate analysis, and reduces complications in the event of insolvency Because some complex debt systems still remain, notably among the railroads, an illustration of their creation will be useful

Figure 2 (below) illustrates a situation typical in railroad



*Adapted from Gustenberg, C W, "Financial Organization and Management of Business" (Prentice-Hall New York, 3rd rev ed, 1951)*

**Figure 2 Methods by which Successive Mortgages are Imposed on Consolidated Properties.**

history Let us assume that three companies, 1, 2, and 3, were organized in the same kind of business at different times, and, in the course of growth, placed mortgages *A*, *B*, and *C* upon their respective properties, and that they then consolidated into Company 4, the consolidated properties being valued at a figure somewhat in excess of the separate values of the three companies Later, Company 4 placed mortgage *D* on its property Then corporation 6 was organized as a consolidation of Company 4 and

Company 5 The latter company had no mortgage on its property Company 6 then placed mortgage *E* on its properties

Company 4 would probably call the *D* mortgage a first consolidated mortgage because, although it was not a first mortgage on the property, it was the first mortgage that the consolidated company put on its consolidated property Mortgage *E*, of Company 6, would probably be called a first and consolidated, or first and refunding mortgage It actually has a first lien on the part of the property that was brought by Company 5 In Company 6, mortgages *A*, *B* and *C* would be called underlying mortgages and might also be referred to as divisional liens Mortgage *D* is junior to mortgages *A*, *B*, and *C*, and, to a certain extent, senior to Mortgage *E* Because *E* has a direct lien on a part of the property—probably an important part of that of the whole company—it would hardly be called a junior mortgage The term "general" would be more appropriate and would be more frequently used The term "blanket mortgage" is sometimes used for such a mortgage as *E*, and indicates a mortgage on all of a company's property, owned at the time or thereafter acquired It would "blanket" the property

As each new and larger company was formed to take over the earlier company by consolidation or merger, it would assume the liability for the bonds of those corporations whose properties were absorbed Consequently, these bonds would become a general credit obligation of the assuming corporations even if the original property pledge were to disappear, wear out, or be abandoned On the other hand, as long as the original pledged property continues to have value, the investor must obtain special information as to its value and earning power if he is to evalute the strength his lien gives to his particular bond issue Even though the property may never be seized by the bondholders to whom it is pledged, the contribution that it makes to the earning power of the system will weigh heavily in determining the amount and quality of any securities given to them in the event of a reorganization following a default Indeed, sometimes the position of the mortgage is so strong that the particular bond may have its interest paid throughout the period of trouble and then be assumed without any change in form or security by the newly organized company formed to take over the business.

In the event of reorganization, debt simplification might be achieved by creating only one or two new bond issues into which all the old bond issues would be required to exchange their holdings unless their claim was so weak as to deserve only some security such as common stock, or no payment at all Thus, a newly reorganized company might have one ordinary fixed interest, mortgage bond issue, and general or second mortgage income bond, the payment of whose interest would be dependent upon available earnings An old first mortgage divisional lien of good quality might be exchanged for the new first mortgage bonds for its full claim, a junior lien might receive half of its claim in first mortgage bonds and half in the new income bonds, and, finally, a first mortgage on a branch line that showed no earnings or an unsecured obligation might be obliged to accept either the general second mortgage bonds in the new company, for their entire claim, or else a portion of the new stock if indeed they were not obliged to accept even poorer treatment [2]

Such simplification under the compulsion of reorganization has been important in the railroad field Similar but slower simplification of solvent corporations has taken place gradually through refinancing Thus, in the complex debt situation used in the previous illustration, Corporation 6, the last corporation to be formed, might plan to use its E bonds from time to time as a means of refinancing the previous underlying liens as they matured This would be done by selling additional amounts of the E bonds and using the proceeds to pay off the older issues Such an intention could be indicated by the inclusion of the word "refunding" in the bond title When other bonds had been retired, whether by refunding or gradual repayment out of earnings, this later issue would become a first lien on all of the property and achieve a higher credit standing [3]

Many railroads have simplified their debts by retaining enough earnings over the years to pay off their smaller underlying bond issues as they came due

To permit simplification by refunding along the lines just suggested, the E bonds would have had to be "open-end" An open-end provision is one that permits later issues of the same bond issue with the same mortgage or other security The later issues

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[2] The reader wishing to study an illustration of reorganization involving a number of issues will find an example in the case of the Chicago & North Western Railway Company in Guthmann & Dougall, *op cit* pp 624–627

[3] Upon the retirement of the Michigan Central First Mortgage 3½'s at their maturity in 1952, the road's Refunding and Improvement 4½'s of 1979 move from a second to a first mortgage position on 272 miles of valuable main line double track extending between Detroit and Chicago The properties of this road are operated by the New York Central Railroad under a 99 year lease expiring in 2028

An example of a strong refunding mortgage may be had in the Union Pacific Railroad Company Refunding Mortgage 3½'s of 1980, of which $81,602,000 were issued in 1940, the proceeds of which along with other monies were used to redeem $85,902,000 of the company's First Lien and Refunding mortgage bonds are permitted either for the purpose of refinancing debt with senior or equal liens or for the purpose of financing, at least in part, additions to property. Lest the quality of the issue be weakened by expansion, it is customary to include a protecting provision, along with an open-end provision, that subsequent issues be limited to a certain percentage of added properties and that earnings shall be sufficient to cover the interest of the existing bonds and the additional debt by a sufficient margin to insure safety.[4]

The railroads and public utilities that expect to have continuing debt issues for the purpose of expansion are the chief users of the open-end provision in their mortgage bonds.

**Priority without liens.** Although it is exceptional, the reader should be informed that priorities may be established by an order of the court in bankruptcy cases and by debt agreements. When a corporation passes into the control of the court as a result of actual or threatened default, it frequently becomes necessary that cash be raised in order to continue current operations. The court will authorize its agents, the receivers (or trustees), to issue short-term notes known as receivers' (or trustees') certificates. These certificates may be said to rest on the physical property of the company as well as on its general credit, although they are not accompanied by a mortgage on the corporate property. They depend for their strength on the fact that the receiver represents all parties and is protecting them. This explains why the securities he issues may have priority over mortgage bonds. Their exact priority is usually fixed in the same decree of the court that authorizes the issue.

Receivers' certificates are usually issued for a short period to meet temporary needs and are paid off or refunded before the property passes from the jurisdiction of the court.[5] As a rule, therefore, this type of obligation must be accorded a good rating for investment purposes

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[4] The priority problem may also be found, though much less frequently, in a field of civil obligations. The City of Seattle Light & Power system, for example, was founded before the open end provision had become common. In consequence, it has sold a succession of closed bond issues, each with a claim to income which is junior to that of all prior issues. As a result it had nine layers of debt priorities (1950) by debt agreement rather than by mortgage liens. As the prior issues are paid off and retired, the newer issues move up in the hierarchy of priority and investment quality. Some governmental bodies have created priority by pledging particular tax revenues or property.

[5] Generally, receivers' certificates are paid off with money received from junior security holders at the time of reorganization, and the holders are not asked to participate in the reorganized company. Rarely are they asked to take new securities. In the preliminary reorganization plan of the Atlanta, Birmingham & Atlantic Railroad, however, the holders of $5,000,000 of receivers' certificates were offered 40 per cent of their claim in new first and general 30-year bonds at 90 and 60 per cent in cash.

**Debenture bonds** The ultimate in debt simplicity is achieved when the corporation is able to borrow without giving any lien to creditors The result is debenture bonds Where no creditor has priority, all creditors stand alike much as they would if all were secured by a single, open-end mortgage Although mortgage bonds have been the common instrument used for financing the long-term debt of railroads, utilities, and real estate, major industrial corporations have been gradually moving toward the use of the debentures, often at surprisingly low interest rates[6] Such industrial corporations typically have only a small amount of current liabilities and a large supporting net worth invested by their stockholders

In place of the protection of a mortgage lien which serves to guard against a later accumulation of creditor claims, the debt agreement of a debenture bond would ordinarily contain protective provisions prohibiting debt increases except under the most conservative restrictions, requiring the maintenance of a strong working capital position, and a limitation of dividends designed to avoid draining off cash resources The investor in such cases has come to recognize that he is virtually the sole creditor He would derive no significant benefit from a mortgage pledge The lien only has importance where there is possible competition for priority among the creditors in case of trouble In such a situation, the priority of a lien is desirable and should be upon properties that are likely to have the most permanent value at least for the life of the secured loan Where a debenture is issued by a company that has given others mortgage security, it occupies a weak position

**Liens on strategic property.** With the search by the investor for maximum safety and by borrowers for low cost funds, the lien will continue to have investment importance especially in situations where the property seems to have value independently of the profitability of the operations of the particular borrower Railroads with poor credit or even in receivership have been able to borrow upon the security of railroad equipment Bus companies operating a local transportation system, a business with considerable investment risk, have been able to borrow on the security of new motor coaches Industrial concerns with only fair credit have been able to borrow on the mortgage security of store or office-building properties that could be used by others if the owner failed

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[6] In this respect the use of debenture bonds by the Bell Telephone System, a utility and our largest nonfinancial business corporation, is an interesting exception

Railroad equipment obligations are of special interest to the investor not only because of the amount of such obligations that have been sold but also because of their illustration of high credit standing in a field where the general credit of the industry has declined in recent years. Some writers, explaining the high quality standing of these issues, have emphasized the ease with which freight cars and locomotives could be separated from the possession of a defaulting railroad and converted to the use of other roads. They have also stressed the margin of property values over indebtedness resulting from a substantial down payment and the complete repayment of the obligation over a ten- or fifteen-year period or well within the economic life of the equipment. Equally important, however, is the strategic position of this particular asset and the fact that some margin of net income ordinarily exists for even the most hard-pressed debtor, a margin which is available for the satisfaction of the most urgent creditor claims. The railroads find that their better equipment used as security is a necessity for continued operation. That these two latter considerations are important is indicated by the poorer and more fluctuating credit standing of the similarly secured debts incurred by air transport companies for the purchase of planes. Here too, a margin of safety in the way of property values is required, regular repayment over a short period of time is the common agreement, and the equipment is a strategic asset essential for continued operation. However, instead of being a small part of the total investment, the planes are typically a major part of the total assets and the earnings sometimes fluctuate so violently as to leave no net income.[7] The differences explain the difference in credit standing.

The investor in secured debt places a dual reliance upon the income of the business and upon the lien that gives him a certain priority with respect to the value of the specific property pledged in case of any trouble. At times the investor makes the error of placing too much emphasis upon the latter and adopts the philosophy of the pawn shop operator. The best investment results are obtained by giving primary emphasis to the available income and only secondary weight to the pledge of property When this attitude is adopted, the investor is obliged to give consideration to management, organizational, and operational elements that make the employment of the capital profitable

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[7] For a fuller discussion of equipment trust obligations, especially in the conventional "Philadelphia" plan form, see Guthmann & Dougall, *op. cit.*, pp. 130–135. The plan places title in a trustee for the benefit of the investor. The railroad rents the equipment. The final payment of the series is made the sale price. Rental payments provide a fixed income and for the gradual retirement of the resulting equipment trust obligations. The arrangement is of particular interest to the investor as illustrating an intricate legal arrangement wherein the instrument is ownership in form. He is the owner of an interest in a lot of equipment, but because of the fixed liability of the railroad to pay rent, the responsibility to the trustee is a genuine liability. As a result, the instrument is commonly treated both in accounting for the railroads and in the investment field as a debt obligation.

The lien principle of security might be said to rest upon a liquidating theory of business The investor-creditor accepting as he does a limited and often very small return on his capital deserves whatever protection such security can give him in the event of unforeseen trouble Nevertheless, analysis should emphasize the going concern and its income-producing aspects if the investor is to have maximum success This is especially necessary when the rate of return is so low that it provides little or no reserve for losses In such a situation success depends upon the selection of healthy borrowers who will be able to meet their credit obligations promptly and with but rare exceptions

**Economic priority.** One of the merits of this discussion should be to cause the investor to think more broadly of his position in the economy We commonly think of the holder of a first mortgage bond as having the first claim upon the income of a business Actually this priority is only with respect to net income and among the suppliers of capital The operating expenses have a superior claim In order to operate at all, the business must continue to meet the payroll and pay for current materials and supplies Thus, in a very real sense, labor enjoys a priority over the supplier of capital even when the latter is the best-secured bondholder

During the depression of the 1930's, some who were critical of private business claimed that capital had "gone on strike " What they meant was that capital was not being invested in new enterprises. Why it should be socially reprehensible to refuse to invest in additional facilities or even to replace old ones at a time when existing facilities were not being fully used is difficult to understand In view of the respectability of the "strike" among these same critics of business, it is even difficult to understand why the charge should have been regarded as so damning Actually, the great array of capital already invested in railroads, utilities, factories, stores, and residential property, far from going on strike, continued in use even when it failed to receive any pay envelope at all—a thing no laborer would or could be expected to do Much capital continues even in good times to serve the community either with no return or at a very subnormal rate of return—hardly a condition that justifies the statement that it has "gone on strike " This emphasis on what is done by existing capital is important because it totals far more than the relatively small amount of new capital added each year

Fortunately, for the financial condition of our leading financial institutions, most corporations do continue to pay interest to their creditors even in depression years when earnings are less than the amount required If a business has sufficient cash resources, it will, of course, pay interest to avoid bankruptcy In such cases, unearned interest comes out of the equity or the capital of the owners of the business It is necessary to do this in order to prevent the possible loss of the whole equity, should default give to the creditors the right to take over the business At times the same thing is done in the case of payroll and other expenses to preserve a going business and hold an organization together Ability to handle operating expenses out of accumulated resources in this way is much more limited than in the case of interest, because the latter item is so much smaller in relation to the total revenues and resources of the business A conservative management tries to keep some extra cash resources for just such an emergency That such a temporary resource has only limited value in a major depression is indicated by the wholesale defaults in the field of real estate bonds during the 1930's and the bankruptcy of about one third of the railroad industry The latter record was made in spite of governmental financial aid in the form of loans to railroads by the Reconstruction Finance Corporation

This reference to government aid for the railroads leads to a further point on the broad position of debt in our economic society These RFC loans were made less for the purpose of aiding the railroads, which in previous depressions had been left to shift for themselves, than for the sake of the financial institutions that are the major investors in high-grade debt such as most railroad bonds were believed to be as recently as the 1920's In the same way, assistance to home owners and farm owners who had defaulted on their mortgages in the early 1930's was partly aid to a large group of small property owners and partly support for the financial institutions holding those mortgages This job was done through the Government's Home Owners' Loan Corporation and the Federal Farm Mortgage Corporation[8] Similarly, advances of capital to commercial banks and to a small number of other financial institutions was a sign of the times

Such aid was a recognition not only of the needs for shoring up our financial institutions in order to restore that business confidence necessary to economic revival from a smashing depression but also of the political importance of these thrift institutions, which hold the savings of millions of citizens As wealth becomes more widely distributed through the operation of such institutions, their financial health becomes a matter of increasing political concern Life insurance companies, commercial and savings banks, and savings and loan associations become the objects not merely of regulation but also of protection by the state under such conditions

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[8] The works of these two government agencies is further described in Chapter 1a devoted to the obligations of the United States Government

Some would go further and say that such assistance by the Federal Government was a moral obligation flowing from its own failure to do a competent job in the field of monetary management—a field in which business is helpless and in which governmental control must be exercised When in the space of a few years so many banks fail that the deposit currency of a nation is shrunk by one third and the price level falls correspondingly, even loans solidly secured at their inception become insecure While the state of the applied economic and governmental arts raises the question of our ability to obtain monetary stability, it is generally accepted as a desirable objective and one that can only be reached by proper action of the government and the central banks Ideally, a stable price level that made such heroic rescue work less likely, if not unnecessary, would be preferable to a program of assistance after the event

In the field of ownership investment no such clear cut recognition of the needs and rights of the investor is to be found Limited protection of the rights of owners is found in the work and regulation of the Securities and Exchange Commission and in certain principles of public utility regulation that will be discussed later (Chapter 10). The residual position of the investor-owner and the necessary hazards that owners must always accept in a competitive, free-enterprise, profit-and-loss system must be recognized Nevertheless, the hostility often shown towards the stockholders and landlords represents a failure to consider their economic rights and their contribution to the community This attitude is seen in the rent control laws after World War II, which treated the owners harshly in spite of the fact that the ownership of real estate is widespread and sometimes represents the chief income reliance of older, retired persons With the widening ownership of common stock through the development of the investment company, as well as directly, some improvement in the political treatment of this group would seem likely even though they fail to acquire the consideration accorded those who invest in those institutions which place their funds in bonds and mortgages, namely, the thrift institutions If private ownership is to continue to supply ownership capital in the field of real estate and business, the owner-investor must be allowed to make an above-normal return in good times and in his successful ventures sufficient to counterbalance his losses and depreciation in unsuccessful ventures, so that his average return will be reasonable and fair Otherwise he will retreat to debt investment that offers a more constant, though lower, return

**Special debt forms of the financial institution.** Because of their importance to the investor, the special forms of debt relationship that the thrift institutions offer him for his funds should be mentioned The commercial bank in addition to accepting demand deposits, which are subject to check and serve as our money, also accept time or savings deposits upon which interest is paid These latter deposits serve as an investment medium that is particularly suitable for meeting emergencies because they may be withdrawn on need Legally, the banks may require advance notice of some 30 or 60 days from those who wish to withdraw time deposits Practically, such a notice is rarely required, partly because the banks wish to please depositors and partly because some persons would regard such a requirement as an admission of a lack of liquidity, which might even bring on a run of withdrawals The special advantage of the savings deposit as an investment is the willingness of the bank to accept odd sums for investment, subject to a maximum, while an investment in a bond, a mortgage, or a share of stock requires a certain minimum amount of money that is determined by the market value of a unit of such investment

The savings deposit is a special form of debt investment that constitutes the liability of a banking institution and is especially appropriate for the small saver He obtains an investment package that offers an indirect investment in a diversified pool of high-grade investments, namely, bonds, first mortgages, and loans to business, without any of the cares of the management. He pays for this service and liquidity as well as for the bookkeeping for the numerous small transactions by accepting a somewhat lower return than he could have if he were able to invest on a larger scale directly in the kind of commitments that the bank itself holds

The mutual savings banks that are found in about one third of the states, particularly those in the northeast, specialize in savings deposits and do not accept checking accounts. They offer one peculiarity when contrasted with the similar deposits of the commercial banks. Legally, as participants in a mutual organization that has no other owners or stockholders, the depositors are owners rather than creditors, and they receive a "dividend" rather than an interest. Practically, their accounts are kept on an exact dollar basis like that of ordinary depositors who are creditors, and dividends are credited to their accounts as they are declared by the board of trustees. Any surplus is kept as a floating reserve to meet any unusual losses in depression periods.

A similar "investment contract" exists in the savings and loan association, which is also a mutual organization. Here, however, the member may purchase "shares" of round amounts, typically $100, but his account will merely show whatever payment he may have made upon those shares. While the shares may be fully paid at the outset, they are often paid for on the instalment plan, and sometimes by irregular payments or a large lump payment, as for half of the face value. Moreover, any dividends, whether paid in cash or credited to his account, will be a percentage of his credit balance rather than upon the face, or nominal, amount of his share holdings. Until the 1920's the shareholders in these associations were firmly bound to their investments, which were made on an instalment basis, until the full face amount of the shares had been accumulated by deposits and dividend credits. No withdrawal privilege existed at that time. During the 1920's many associations adopted the withdrawal privilege, until today it is a common practice in this field. Varied plans of deposit that depart from the strict monthly instalment plan of payment have also become common. Because the investment of the funds of these associations is almost wholly in real estate first mortgages, it is recognized that making full and prompt repayment would be impossible if it were demanded upon a wholesale scale. Consequently, under the law that now regulates federally chartered savings and loan associations, it is not an act of insolvency to fail to pay the shareholders upon request for withdrawal. Their withdrawal requests may be filed in the order in which they are placed and repayment may be made as cash receipts become available. Here again, customary practice differs from the contractual situation. Because ability to withdraw is one of the cherished advantages, these associations, like mutual savings banks, ordinarily permit withdrawals without requiring notice in all cases. Current receipts are normally sufficient for this purpose. Some associations carry liquid investments in government obligations to supplement cash and also hold membership in the Federal Home Loans Banks, where they have the privilege of borrowing on the security of first mortgages to meet members' demand for withdrawals The creation of a system of share insurance under the Federal Savings and Loan Insurance Corporation is also designed to prevent panicky runs by frightened investors

The investment contract for life insurance companies is unique in providing a policy contract that is actually a combination of investment and life insurance Premiums for almost all types of policies, save a few term insurance policies require the insured to pay substantially more than the bare cost of current death losses and operating expenses These extra amounts are designed to permit the company to give insurance protection on a level premium basis throughout the life of the policy, in spite of the fact that as the insured grows older the cost of protection rises per $1,000 of insurance Were it not for this additional sum over and above the amount necessary to cover current insurance costs, it would be necessary to charge a gradually rising premium as age advanced, and the rate would become prohibitive for most persons at advanced ages This surplusage of premium income is the basis for the legal reserve of the life insurance companies and for the huge accumulation of assets that the life insurance companies have in investments To avoid inequity to the policyholder should he wish to discontinue his contract, there is a standard provision that amounts to a savings bank privilege, known as the cash surrender value[9] The surrender value of a policy is essentially the investment element, and grows from compound interest much like a savings bank account Consequently, an investor can regard his life insurance policy as a gradually increasing investment account plus a decreasing amount of life insurance, the sum of which is equal to the face amount of his policy As his "savings account" builds up, it reduces the real risk of the insurance company As a result, the level premium is more than adequate to cover the diminishing insurance risk, and the investment element will equal the face of the policy if one survives to a sufficient age If, when the insured reaches the age of retirement he has no further need for insurance, he may cash in his investment element, or savings account, and use it to purchase a retirement income for himself and wife in order to supplement his old age pension or any other investment income he may have

In spite of the fact that most life insurance companies are mutual organizations, their policy contracts are treated as definite dollar liabilities, and regulations requires strict tests of their solvency The mutual feature permits the policyholder of such companies to share in annual "dividends" in any surplus arising from their (1) earning more interest than the rate assumed in setting their premiums, (2) experiencing fewer death losses than the mortality tables show, or (3) having lower operating expenses than were allowed for in setting up the premiums As might be guessed from the nature of the policy contract, life insurance companies follow an investment policy much like that of savings banks Their legal reserves to support their liability to policyholders are chiefly invested in debt form, such as high-grade bonds of business and government, and in first mortgages on real estate

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[9] Elizur Wright, an early pioneer for insurance reform, used the phrase "savings bank insurance" to indicate the nature of the legal reserve and to secure the adoption of legislation compelling life insurance companies to grant cash surrender values This provision is sometimes known as the non forfeiture agreement

**Preferred *stocks*** The chief characteristics of the preferred stocks have already been outlined earlier in this chapter Its hybrid character, which places it midway between the ordinary bond and common stock, was noted Little need be added here save to delineate more sharply the customary arrangements at those points of greatest importance to the investor Special variations that represent the exceptional practice will be taken up later in the chapter

The rate of dividends stipulated in the agreement is ordinarily cumulative Any deficiency in dividends at the given rate accumulates and must be paid before any dividends whatsoever can be paid on the common stock[10] Among electric and telephone utility operating companies, preferred stocks have had an excellent dividend record, thereby laying a basis for their continued use as

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[10] Sometimes the preferred stockholders may prefer, especially when the accumulation of back dividends is considerable, to waive or exchange their right to arrears for something else instead of waiting for the slow process of cash payments over the future years Thus the Bucyrus-Erie 7 per cent cumulative preferred, while it did not completely pass its dividends, paid them only in part after October 1, 1932 so that an accumulation of $16 existed in 1936 At that time they accepted an offer of a 7 per cent preferred share similar to the old one, and for the accumulation they received $5 in cash and one share of common stock When listed upon the exchange, the common stock sold for substantially $12 50, so that the settlement actually brought more than the $16 of arrears (*Commercial and Financial Chronicle* 143, 1067, Aug 15, 1936)

On the other hand, a long wait without settlement or with only a weak settlement is possible The test of the acceptability of an offer to the preferred stockholders should be whether the value of the settlement offered is equal to the present value of then existing stock plus accumulated arrears after allowing for the uncertainty and the time required to pay the latter out of future earnings In the unusual case of the American Hide and Leather Company, its 7 per cent cumulative preferred showed an accumulation of $217 73 per share in 1935, or over 31 years of back dividends In that year a recapitalization plan was accepted and new securities issued in liquidation of the claim See Guthmann & Dougall, *op cit* pp 565–568 for further discussion of methods of caring for accumulated arrears a financing instrument for expansion In general, preferred stock owners will be paid their dividends whenever they are earned Nevertheless, if the position of the creditors is at all in question, directors will feel it incumbent to place the solvency of the corporation ahead of the preferred dividends Especially in the industrial field, corporations have been known to postpone or defer dividends while retaining earnings to retire a burdensome debt. Since the preferred stockholders receive no compensation for this waiting, directors will, as a matter of good faith, pay dividends promptly whenever it is possible to do so without endangering the solvency of the company (Indirectly, the relatively weak legal position of the claim of the preferred stockholders to income is compensated for by the higher yield ordinarily paid them as compared with the rate paid on similar bonds ) Because the question of what is necessary in the way of retained earnings to maintain the financial health of a business is a matter of business judgment rather than of rule, the investor will find it necessary to study the record of the particular business in which he is investing to estimate what the future dividend policy is likely to be under given earning conditions

Although preferred stocks differ from bonds in their lack of a maturity, a partial equivalent is often provided in the requirement that a certain amount shall be set aside each year to repurchase shares by a sinking fund To the extent that earnings and financial conditions permit, the preferred stock will have a life that can be estimated Because in the absence of a maturity, market price fluctuations for preferred stocks are greater than for bonds, a preferred stock is doubly benefited by a sinking fund. A sinking fund program provides an artificial market support to maintain price, and the repurchases tend to improve the quality of the remainder by reducing the size of the issue The directors may go beyond the stipulated requirements of the investment contract and, as a matter of conservatism, repurchase preferred stock at a more rapid rate than required, feeling that to be the desirable course in order to move in the direction of an all-common-stock capital structure

Discussion of a sinking fund suggests the possible importance of a fair call price in the preferred stock agreement Bonds are ordinarily callable at a figure very close to par, preferred stock often enjoys a call price somewhat higher [11] Some of the older preferred issues, such as those of American Can, American Tobacco, International Harvester, National Biscuit, and United States Rubber, issued many years ago in the era of giant consolidations at the beginning of the century, have no call provision A high call price, when it does exist, has a two-fold significance First, it permits so much more possible market appreciation when the issue has been purchased for par or less and, in the second place, appreciation may be induced by a sinking fund that gradually pushes the market up to the call figure [12]

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[11] A spectacular exception in the case of bonds was the Bethlehem Steel Corp 6's of 1998, which spurted some 27½ points to a price of 180, a record figure, in 1942 when the corporation in the absence of a call feature offered $1,810 for each $1,000 bond A strong motive for retirement lay in a provision of the 1942 Revenue Act,

Whenever a preferred stock has risen in the market to the call price, it may thereafter fluctuate within a very narrow range The stock may be held up to the call price by sinking fund purchases or by a relatively high dividend rate, and may be prevented from rising further by the possibility that the company might redeem it at any time Once this price level has been reached, the investor is always faced with the contingency of redemption because the issuer may find it advantageous to refinance with a new security paying a lower dividend rate An investor desirous of acquiring a security with price stability might find such an issue attractive However, an individual concerned with appreciation might argue that no further gain would be possible and only the possibility of market action would be on the down side

This discussion leads to a point that should receive more consideration Prior to 1920 many corporation issues sold noncallable bonds and preferred stock Since then the call feature has become almost universal The change in practice has had a double advantage for the corporation, (1) making it easy to repurchase its obligations for sinking fund without running the price up to an exorbitant figure, and (2) permitting the corporation to refinance whenever its own improved credit standing or a decline in interest rates made it advantageous to do so As partial compensation to the investor it is customary to pay more than the par value This call premium is to pay him for depriving him of his investment prematurely [13] Even this slight compensation has

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which permitted corporations to retire bonds with their 10 per cent excess profits tax refund.

[12] Because of the low price to which Childs Co 5½ per cent preferred stock fell after its 1947 reorganization, its sinking fund and call feature provided the equivalent of a "lottery" feature The company was required to use 25 per cent of net earnings beginning with Oct 1, 1947 to retire preferred stock by call at 100 for the first 5 years and at 110 thereafter While stock could be purchased by the company in the open market, such purchases could not be used to satisfy the sinking fund provisions With the stock selling at less than half of the call price, a large profit became possible if one's own particular stock was called for sinking fund

[13] Sometimes two sets of call prices are found, a lower call price for those bonds that are purchased for regular sinking fund, and a higher call price for any addi-

been nullified by the practice, especially in the utility field, of selling securities at a premium over par so that the spread between the issuing price and the call price is often very small

The call price itself is frequently graduated downward toward the par value over the life of the bond, on the principle that the loss of the bondholder from redemption diminishes as the remaining life of the bond runs out, during which time he might continue to enjoy the advantages of his investment

The consequence of the conventional call, or redemption, feature is a provision drawn to the advantage of the issuing corporation and to the disadvantage of the creditor If interest rates go down, the corporation can call in its obligations with only a small penalty in the way of call premium and refinance the indebtedness at a lower interest rate or preferred dividend rate If, however, interest rates rise, or the debtor's credit weakens, the investor must bear with the original, stipulated rate of return for the full life of the contract As for the price of his investment, it will decline in the event of higher interest rates to the point where yield on the market price will be in line with the new and higher level of interest rates Appreciation is limited by the ceiling of a call price. One of the few fields in which noncallable bonds are still found is in the field of municipal finance where regular and systematic retirement is provided for by serial maturities, whereby a certain portion of the issue comes due each year or half year The result is a bond issue with a series of maturity dates rather than the customary single maturity date The serial bond offers the investor a choice of a number of maturities in a single issue Even in this municipal field there has been a growing tendency to employ the call provision

**Classified common stocks** Since in certain states a corporation may divide its stock into two classes, or even more, and give each class whatever provisions it chooses within the limits set by statute, we sometimes find a Class A common stock, which is to all intents and purposes a preferred stock[14] For example, Montgomery Ward and Company has a 7 per cent noncallable Class A stock that in the absence of any prior obligations has come to enjoy high investment rating Similarly, Coca-Cola Company has a Class A

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tional redemptions over that amount The lower call price is on the theory that the regular sinking fund is a matter of mutual advantage to the corporation and the bondholder or preferred stockholder, the higher call prices on the basis that any additional purchases are largely for the benefit of the corporation

[14] For a fuller statement about classified common stock and for examples, see Guthmann & Dougall, *op cit*, p 91

stock that is an ordinary $3 cumulative preferred, redeemable at $52 50 and accrued dividend Such stocks will be classified by the investor and studied according to their preferred stock characteristics rather than on the basis of their legal classification as common stocks On the other hand, a Class A stock may be nothing but a separate class of common stock without voting power

**Common stock** Little need be added to what has previously been said about the contractual position of common stocks save to emphasize their character as a fractional share in the ownership of an incorporated business As such, its worth is primarily dependent upon what the investor can hope to realize in the way of future earnings and dividends Lacking any maturity date, such as a bond has, upon which a fixed par amount will be paid, or even the fixed rate of income of a preferred stock, valuation of a common stock is that much more difficult The presence of a legal par value for common stock has almost no investment importance

Even when a new corporation has sold common shares for their exact par value, the investment, or market, value of such stock may rapidly move either up or down depending upon the changing aspects of the company Actually, many corporations have in recent years adopted a nominal par value for their stocks so that most of the amount paid in for the stock upon its issuance shows on the balance sheet as Surplus of the "Paid-In" or "Capital" variety and only a very small portion appears in the capital stock account A surprising number of large companies now show a par value of as little as $1 per share without its influencing the market price in the least About the only significance of par value is that it may serve as a basis for certain capital stock or transfer taxes and it is the legal minimum below which corporations cannot sell their stock without the purchasers incurring liability to creditors for the amount of the deficiency In addition to the many corporations that use a low nominal par value, many more have common stock that has no par value The directors in such cases decide how much of the amount paid in for the stock shall appear as Capital Stock and how much as Paid-in Surplus, subject to the laws of incorporation of the state as to a minimum amount for the capital stock

The legally inferior position of common stock generally should receive less emphasis than it does in many instances More attention should be devoted to the actual performance of the particular stock By emphasizing the individual position of common stock we emphasize investment character instead of legal form If a common stock has no prior claims ahead of it, then a certain fraction of its income has the investment quality and stability equivalent to what would exist if interest for bonds or preferred stock dividends for that amount were present Because this fraction of income comes to the investor from a common stock, he may regard it as fraught with investment risk simply because of that fact, whereas he would be willing to accept a very low yield if offered a bond paying so much interest

To illustrate this situation more vividly let us suppose the following facts were true for an industrial corporation

| | |
|---|---|
| 1 Common shares outstanding | 1,000,000 |
| 2 Bonds and preferred stocks outstanding | none |
| 3 Earnings per share—current | $ 10 00 |
| 4 Dividends per share—current | 6 00 |
| 5 Dividend record unbroken since 1910 | |
| 6 Lowest dividend in last 20 years | 3 00 |
| 7 Market price of common stock | 100 00 |

Let us suppose further that this corporation could sell a 3 per cent bond for $100 Under these circumstances the investor who is not bound by legal rules might well ask whether he could not profit by purchasing such shares, and regard the investment as an equivalent of a $100 bond paying 3 per cent and the extra income as virtually a gift The company has never paid less than $3 in the past twenty years and the outlook is as bright as the past This amount is the fixed income per year Some readers will argue that this case is extreme, and raise the question of whether such a corporation could sell so many bonds at so low a rate of interest Yet in recent years so wide a gap has been driven between the yields available on common stocks and on bonds that to some this illustration comes close to the actuality sometimes found in the market (See Chapters 5 and 6 on return on investment.) Such opportunities can arise for the investor who is able to take advantage of them from time to time because certain thrift institutions that dominate the debt investment field are obliged to invest there, while the individuals who are free to take advantage of such a situation in common stocks may lack sufficient investment background to appreciate the situation Where market barriers exist in this fashion, investment bargains may be had

**Trading on equity.** Such disparities between the cost of borrowed funds and the return on common stock explain the pressure upon corporate management to utilize debt or preferred stock at times, rather than to sell common stock for expansion Even conservative management may feel the situation is advantageous for the use of a prior obligation with the idea that the savings in the rate of return on this prior obligation over what would be necessary in the way of dividends on common stock may be used to retire the prior obligation over a period of years This use of fixed-income securities, whether debt or preferred stock, in the hope of adding to the return of the owners, is known in financial circles as "trading on equity"[15] Owners of a business use their "equity," or ownership investment, as a basis for obtaining funds from others, which they hope to use with sufficient profit so that it will enhance their own rate of return Thus, if an individual company can make 8 per cent on additional capital, and pays only 3 per cent on bonds or 4 per cent on preferred stock, the difference will add to common stock earnings Trading on equity is also referred to as "leverage" The larger the amount of prior securities in relation to the equity of the common stock, the higher the leverage and the higher the possible rate of return on the latter

Clearly the assumption of the heavier burden of prior claims will also increase the chance of failure

The disadvantages of trading on equity might be stated briefly as

1 The risk of insolvency for the common stockholder from failure to pay either interest or principal upon any debts incurred.

2 The risk of unprofitability should earnings fail to equal the added charges, whether interest or preferred dividends

3 The increase in the fluctuations of the stream of income for the common stock because of the presence of the fixed claim for the prior security

4 The lower credit standing for the common stock that is preceded by prior issues and by the need for a more conservative dividend policy so long as such senior obligations are present, especially if they are being retired from earnings

On the favorable side are.

1. The higher potential return for the common stock from the use of trading on equity

2 The avoidance of increasing the amount of common stock on what might be unfavorable terms Where common stocks are sold it might have to be at such a price that any increase in profits from the expansion might be fully offset by a proportionate, or even more than proportionate, increase in a number of shares outstanding

3 The capital structure is given what may be a useful flexibility Prior securities not only offer a place to use future retained

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[15] For fuller discussion and illustration of trading on equity, see Guthmann & Dougall, *op cit*, p 99–101.

earnings, which can build values for the common stockholder, but also a place for funds collected to care for depreciation of assets that the company may not require for replacements for many years Such depreciation funds could not be used properly in the meantime for dividends and may not be required for other business purposes.

When used in moderation, senior securities permit a corporation to take immediate advantage of expansion opportunities and anticipate future funds that will be available from either retained earnings or depreciation funds Thus growth that makes for appreciation of the common stockholders' shares is financed in a satisfactory fashion at the most appropriate times

Trading on equity, or leverage, is found in real estate investment as well as in corporation financing In fact, the supply of low cost borrowed funds is so readily available that the bulk of property for residential, office, and store space is probably financed in very large part at the outset with the aid of mortgage debt rather than equity capital

The discussion thus far has purposely centered on the common and usual forms of investments contracts, except for the special case of classified common stocks This treatment has the advantage of making it easier for the reader to distinguish the exceptional from the customary Five variations from the customary are met with sufficient frequency to warrant their study here

**Collateral trust bonds** By far the most common form of security for debt is the mortgage pledge of real property, even though such property may vary greatly, as between that of a huge railroad system or public utility on the one hand, and a humble residence worth only a few thousand dollars on the other Occasionally, however, collateral trust bonds are employed Such bonds are secured by a pledge of collateral, that is, stocks and bonds. Sometimes it is difficult to make an appraisal of such securities because they are the issues of subsidiaries of the corporation that is using them as a pledge, and the subsidiaries report no independent record of their earning power Any earnings they have are mingled with those of the system in the reports of the latter Thus, the New York Central Railroad pledged its holdings of Michigan Central Railroad stock when it purchased the Vanderbilt holdings of the latter and sold its own Collateral Trust 3½'s of 1998 to pay for its purchase At the time of issuance, the Michigan Central was an independent system, but subsequently it was leased to the New York Central, so that its sole income was rent paid by the latter The absence of an independent record for the corporation whose security constitutes the collateral security makes much the same kind of research necessary as was mentioned earlier for the mortgage liens upon divisions of various parts of a railroad system in which evidence of independent value and of earning power was sought.

On the other hand, the securities used as collateral may be those of a corporation whose separate financial records are readily available, and they may also have a known and quoted market value. In such a case, the investor can study both the supporting income position and the market value behind his collateral trust bond. A commercial banker making a short-term collateral loan places heavy emphasis upon the margin of safety provided by the excess of the collateral's market value over the amount of his loan. A collateral trust bond owner is less concerned about the fluctuating market value and gives more attention to the record of the earning power of the securities pledged so he can determine the probability of there being enough income to care for the interest and sinking fund of his collateral trust bond under current and possibly adverse future conditions. Even common stocks have at times been regarded as satisfactory collateral for long-term bond issues when tested in this manner.[16]

**Guaranteed bonds and stocks.** Sometimes bonds or stocks are guaranteed by a corporation other than the issuer. Thus a company might make a direct contract in which it guaranteed the interest on the bonds of a subsidiary company that it wishes to help in financing. The guarantee would then appear endorsed on the bond itself.[17]

More often, guaranteed issues have arisen as a result of a long-term lease of the property of one corporation by another, notably in the railroad field. As one of the conditions of the lease, the lessee railroad might agree to pay a fixed rent that would assure a fixed return not only upon the bonds and preferred stock of the lessor company but also a fixed dividend return upon the latter company's common stock Since an agreement to pay rent is a liability as much as agreement to pay interest, the result is to make the obligation to pay dividends a liability of the guarantor

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[16] An interesting example was the $250 million of 20 year 4 per cent collateral trust bonds sold by the Shell Caribbean Petroleum Co. of New Jersey (1948), which was secured by the pledge of 8,800,000 shares, or two thirds of the stock of the Shell Union Oil Corp., the United States subsidiary of the Royal Dutch-Shell System. The market value of this collateral at the time was $345,000,000. The bond issue was bought by ten large life insurance companies. The issue was one of the largest in the history of corporation finance. (*Commercial and Financial Chronicle* 168; 1734, Oct. 25, 1948.)

For an illustration of the collateral trust bond in the utility field, see the issue of West Penn Electric Co. (1949) of $31,000,000, for which the company pledged substantially the whole common stock issues of its three operating subsidiaries, The West Penn Power Co., The Monongahela Power Co., and the Potomac Edison Co.

[17] The Monongahela Railway Co., Series B, First 3¼'s of 1966, amounting to $11,418,000 (1941) were guaranteed jointly and severally by the Baltimore and Ohio Railroad Co., the Pennsylvania Railroad Co., and the Pittsburgh and Lake Erie Railroad Co. This issue is interesting for its lack of a minimum for its annual sinking fund. The amount is set at $200,000 per year or the net income for the preceding year, *whichever is less.*

In the event of a default, the holder of the guaranteed obligation could fall back upon the original security and make a claim against the guarantor for damages Since the guarantee has only the force of an unsecured liability, so far as the guarantor is concerned, the investor is obliged to look closely to the strength of the original security upon which he must fall back in case of trouble In reorganization the treatment accorded to guaranteed obligations depends upon the value and earning power behind the obligation itself rather than upon the guarantee A valuable terminal property or main line trackage of a railroad would warrant good treatment, but the guaranteed obligations of an unprofitable branch line would be likely to receive harsh treatment On the other hand, as long as the guarantor is financially strong and there is little danger of bankruptcy, the guarantee makes the obligations valuable regardless of the weakness of assets behind the specific security

Sometimes the guarantee is a joint one, through which a number of railroads jointly use property that they can all utilize to advantage, as in the case of a metropolitan railroad passenger terminal or a stretch of railroad providing access to an important city

Guaranteed bonds should not be confused with assumed bonds The latter arise when one corporation merges with another and the existence of one of the pair ceases The surviving corporation assumes and becomes responsible for the liability of the corporation that disappears although such indebtedness will continue to enjoy any security pledge that was originally given to it Assumed stocks are not possible because all stocks are eliminated when a corporation goes out of existence either by merger or consolidation Indebtedness may, however, be continued if assumed by another corporation

**Income bonds.** Whereas guaranteed bonds are a security with something added in the way of a special protection for the investor, income bonds are a security lacking some of the conventional safety The latter are generally issued in a reorganization after a company has fallen upon hard times They are found particularly in the fields of railroad and real estate reorganizations They resemble a preferred stock in that their payments are *contingent* upon earnings Unlike a preferred stock, however, the manner of payment is not ordinarily left to the discretion of the board of directors but is made obligatory, provided earnings exist in a given year Such a provision calls for a careful definition of what shall constitute available earnings Recognition of the weak position of a reorganized company and a possible need for the retention of earnings to finance minor capital needs is frequently reflected in this definition Thus, the agreement might provide that available earnings shall consist of net income after the deduction of not only all operating expenses, interest, and sinking fund for any prior fixed income obligations, but also after allowing for expenditures for capital assets up to some stipulated amount in any year [18] In the case of a real estate income bond, depreciation is usually omitted from among the operating expenses in calculating available income

The greatest objection of the investor to income bonds arises from the uncertainty of interest payments The determination of net earnings is partly dependent on accounting practice Thus, whereas gross earnings and direct operating expenses may be determined precisely, net earnings are dependent on managerial policies with respect to maintenance and sometimes with respect to depreciation Both items involve judgment, and the management, generally representing the common stockholders and invariably concerned with rebuilding the financial standing of the corporation, may find it advantageous to charge heavy depreciation and to treat debatable capital items as expense, thus keeping earnings down for a considerable period Such a policy really permits the property to be built up at the expense of the bondholder Nevertheless the bondholder might well prefer some deferment or even loss of income for the sake of improved safety of principal

**The noncumulative feature.** Just as the income bond is a weaker form of bond than customary, so the noncumulative feature is occasionally found in a weaker than usual variety of preferred stocks It too has been used rarely for financing but more frequently in the case of reorganization If a preferred stock is noncumulative, the understanding is that the full stipulated preferred dividend must be paid in any single year before any common dividend is permissible, but if no preferred dividend or only a partial dividend is paid there is no accumulation to be made up at a later date In the event of such a passing of the dividend, the preferred stockholder suffers irrevocable loss

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[18] The Chicago Great Western Railway Co General Mortgage Income 4½'s due 2038 furnish an example of the income bond Interest on these bonds is cumulative *whether or not earned up to a total of 13½ per cent* The bonds were issued in reorganization in partial satisfaction of a previous issue of first mortgage bonds They are secured by a lien subordinate to that of the new first mortgage bonds also issued at the time of reorganization The position of these bonds is best understood by noting that their interest claim follows first mortgage interest and sinking fund and a "capital fund" charge to meet the need for minor asset purchases

The only debate that has arisen over this feature has been in connection with a failure of directors to pay the dividends in years when earnings were available, and the balance sheet showed an available surplus such that a dividend could have been paid without causing a capital impairment In such cases, the decision of the directors not to pay is ordinarily a final one However, the investor must study the contractual position of the particular preferred stock as it is defined in the corporate charter The applicable laws of the state of incorporation should also be carefully examined

A leading case on this general rule was that of the Southern Railway noncumulative preferred stock The directors of the company declared varying dividends on the stock up to 1923, frequently declaring less than was actually earned In fact, during certain years prior to that time, no dividends were paid at all, although net earnings were in excess of the entire preferred dividend requirements The directors used surplus earnings that might have been declared as preferred dividends in building up the road's properties, until, in 1923, the earnings of the road were ample to pay dividends on both preferred and common stock[19]

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[19] The table below presents the earnings of the Southern Railway Co available for dividends from 1912 to 1924, the preferred dividend requirements, the amount paid, and the amount that was earned and not paid After 1923, the preferred dividends were paid each year until 1932

DIVIDENDS AND EARNINGS—SOUTHERN RAILWAY CO

| | *Year* | *Net Earnings* | *Preferred Requirements* | *Preferred Dividends* | *Earned and Not Paid* |
|---|---|---|---|---|---|
| (Year ended Dec 31) | 1924 | $17,769,140 | $3,000,000 | $3,000,000 | none |
| | 1923 | 15,136,998 | 3,000,000 | 3,000,000 | none |
| | 1922 | 8,823,797 | 3,000,000 | 1,500,000 | $1,500,000 |
| | 1921 | 2,019,370 | 3,000,000 | none | 2,019,370 |
| | 1920 | 1,220,514 | 3,000,000 | 1,500,000 | none |
| | 1919 | 5,360,587 | 3,000,000 | 3,000,000 | none |
| | 1918 | 4,795,852 | 3,000,000 | 3,000,000 | none |
| (Year ended June 30) | 1917 | 13,917,205 | 3,000,000 | 1,500,000 | 1,500,000 |
| | 1916 | 11,324,664 | 3,000,000 | none | 3,000,000 |
| | 1916 | 9,245,703 | 3,000,000 | none | 3,000,000 |
| | 1915 | 1,523,396 | 3,000,000 | none | 1,523,396 |
| | 1914 | 4,747,777 | 3,000,000 | 2,700,000 | 300,000 |
| | 1913 | 7,029,965 | 3,000,000 | 3,000,000 | none |
| | 1912 | 6,718,128 | 3,000,000 | 2,700,000 | 300,000 |

It should also be borne in mind that the company had a sizable surplus on its books, so that the payment of dividends would not have resulted in capital impairment

After 1923, the full preferred dividend was disbursed, as well as liberal dividends on the common stock The holders of the preferred stock in 1924 brought suit against the company, claiming some $29 million of back dividends that had been earned but not paid The Court held, however, that

> the contract here does not give preferred stockholders a fixed dividend chargeable upon the profits of each and every year, irrespective of a declaration of dividends by the board, and hence does not create in favor of the preferred stockholder an obligation upon the company which places the company under a continuing liability to him for a percentage of earnings made and not paid in any one year This is the effect here of the phrase "non-cumulative" as determined by other provisions accompanying its use and by language serving to show what it should be taken to mean I am of the opinion upon the whole case that, when the directors of the Southern Railway failed to declare dividends for the benefit of the preferred stockholders in any year in which earnings were sufficient for that purpose and in bona fide exercise of their discretion allowed those earnings not declared as dividends to be used for general corporate purposes as they deemed best, such failure to declare a dividend settled the question as to the right of any class of stockholders to demand payment out of the then existing or future earnings of the railroad company for any such past dividend [20]

**Participating preferred stocks.** Where the noncumulative feature subtracts something from the conventional preferred arrangement, the participating feature occasionally is used to add something to the usual arrangement Where an ordinary preferred stock is not "participating," but only receives its stipulated dividend, the participating preferred has the right to receive dividends over and above the regular rate The amount of the participation is ordinarily determined by the amount of dividends that are paid to the common stock This extra participation may be unlimited but it is more likely to be restricted to a certain maximum extra rate Such a feature gives a preferred stock an income position and market price action intermediate between that of an ordinary preferred and a common stock

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[20] Norwich Water Power Co v Southern Railway Co Crump Richmond, Va, June 27, 1925 quoted in *Commercial and Financial Chronicle,* 121 71, 72 See also Wabash Railroad Co, *et al* v Barclay, *et al*, 280 U S 197 (1930) In certain earlier New Jersey cases, a contrary decision favorable to the noncumulative preferred stockholders was apparently based on certain peculiarities of the laws of that state relative to the retention of earnings and the payment of dividends

For a good discussion of the principal points involved in these cases, see "Legal Status of Noncumulative Preferred Stock," *Harvard Business Review,* Vol 4, pp 495–500 The preceding discussion is based in part on this article

The 6 per cent participating stock of the Diamond Match Company provides an example of a participating issue This stock is entitled to a regular cumulative 6 per cent dividend of $1 50 upon its $25 par value After the common stock has received a similar dividend of $1 50, the preferred and common participate equally, share for share, until the preferred dividend has reached an aggregate of 8 per cent, or $2 00 No further participation dividend is permitted for the preferred This stock is also preferred as to assets up to the amount of $25 00 per share plus any accrued and unpaid cumulative regular dividends in the event of any distribution of capital assets Consolidations or mergers are not considered dissolutions

**The convertible feature.** Another provision designed to permit the investor in bonds and preferred stock to participate in the prosperity of the issuing corporation over and above the stipulated return is the convertible feature This provision is used more often than is the participating feature The convertible feature permits the investor to exchange his fixed income securities at his own option into a stipulated number of shares of common stock The issuing corporation adds this element of contingent profit in order to obtain a lower immediate cost or rate upon the fixed income securities being sold Sometimes the device helps to make a weak security more salable The issuer may regard the convertible provision as a means of selling common stock by indirection, expecting holders to exercise their privilege as future conditions make it to their advantage to convert When and if conversion does take place, the capital structure will be simplified by the elimination of many of the prior obligations and a corresponding expansion of the common stock The management hopes in this way to sell the common stock at a better price than would be possible at the time the convertible security was sold During the period immediately following World War II, a considerable number of electric and telephone utilities used convertible debentures and convertible preferred stock

Among the more important points covered by the conversion provisions of the agreement are the manner in which the bonds to be converted shall be surrendered, the times at which conversion may be made, the limits, if any, to the period during which the privilege may be exercised, the securities into which conversion may be made, and the ratio of exchange, that is, the number of shares of stock that may be obtained for a given amount of par value of bonds Should bonds be convertible into the common stock of the company at 80 it would mean that $1,000 par value of bonds would purchase the same number of shares of stock as

$1,000 — 80, or 12½ shares of stock. If the stock had been convertible at 150, the number of shares of stocks that a $1,000 bond would bring would be only 1,000 — 150, or 6 2/3 shares.

A few examples will indicate certain points of interest to the investor. A simple case is found in the Consolidated Edison Company of New York Convertible Debenture 3's of 1963, issued in 1948. These bonds were convertible at 25, that is, $25 of par value for each share of common stock, a price that was above the market price of the stock at the time the bonds were sold. A willingness to pay something for the convertible privilege before conversion was either likely or appropriate caused the bonds to sell up to a price of 110. The conditions that would lead the bondholders to actually convert are discussed below.

A variation sometimes found is that of a delayed period during which conversion is not permitted. Thus, the Detroit Edison Convertible Debenture 3's of 1958, issued December 1, 1948, were not convertible or callable for two years, that is until December 1, 1950. Then they became convertible into common at 20. During the waiting period the market price of the bonds lagged behind the market value of the equivalent common stock into which it could later be converted. As the conversion date approached, the bonds would be expected to be worth at least as much as the market value of the stock into which they could be converted. Whenever a security is convertible into another it should never sell for substantially less than that figure, or brokers watching the market will buy the convertible issue, convert it, and then sell the resulting common stock at a profit. (Some allowance for selling and buying commissions has to be made in figuring out this operation.) This process would continue until the buying of bonds and the selling of stocks brought the two market prices into line. Such an operation of buying and selling simultaneously when price differences appear in different markets or in the same market for equivalent securities is known as arbitrage. On the other hand, a convertible bond of preferred stock may sell appreciably above its conversion value. This can occur whenever the security is worth more as an independent investment than it would be if converted into common stock. Indeed, as suggested above in the case of the Consolidated Edison debentures, the market value of a convertible issue may represent the sum of the investment value of the security as a bond plus a premium for the speculative opportunity to convert even though conversion would be unprofitable at the time.

Another possibility is the variable conversion ratio, which is illustrated by the 15-year 2½ per cent convertible debentures of the

Consolidated Gas, Electric Light, and Power Company of Baltimore, sold in April, 1947, which provided that the first $8,000,000 of the $16,770,100 issued should be convertible on or after July 1, 1948 at $60 per share, and thereafter the conversion price was to be $66 67 per share or 3 shares for each $200 of par value of debentures. In order to take advantage of the lower ratio, the first $8,000,000 of bonds were promptly converted as soon as the feature became operative Additional amounts were subsequently converted at the higher price

A more frequent variation of the conversion ratio is one that changes with the passage of time rather than as a certain amount of bonds are converted The conversion price rises with the passage of time Thus, the Houston Lighting and Power Company Convertible Debenture 2¾'s were sold in 1946 with a conversion price of 40 to June 30, 1952 and $44 44 thereafter The general principle behind such changes is that as time passes the common stockholders may make substantial sacrifices to build up common stock values by allowing earnings to be retained rather than paid out as dividends, and so the converting bondholders should expect to pay more for each share as time passes

A common protective provision for such convertible securities is one that provides that if the common stock is divided up at a later time either by a stock split-up or stock dividends, the conversion price will be lowered proportionately Protection might also be given against dilution in the value of a conversion privilege by providing a formula for lowering the conversion ratio if any common stock is sold at a later time at a price lower than the conversion ratio

**When conversion is profitable.** In a discussion of the profits of conversion, a distinction must be drawn between the conditions that make the privilege profitable and those that make for actual conversion A possible profit exists whenever a rising market price for the common stock lifts the price of a convertible bond above its initial purchase price Conversion is unnecessary for the realization of this profit, which can be obtained merely by selling the bond Some purchasers might always adopt this course in taking profits, either because they dislike the particular stock as an investment or because they are prevented from acquiring stocks, as in the case of commercial banks The act of conversion should not be too closely associated with profit realization.

Three situations make conversion desirable

1 The first situation arises when the dividends (or other valuable rights) that go to the holder of the common stock are sufficiently greater than the interest paid to the owner of the converti-

ble bond to compensate for the greater risk, and the stock can be acquired more cheaply by conversion than by sale of the bond and by purchase of the stock in the open market from the proceeds of the sale Thus, if a given bond were convertible, par for par, into stock, and paid 6 per cent interest while the stock paid 5 per cent, it would hardly be profitable to convert, although the stock might have risen well above par on earnings or earnings prospects If the stock rose to 130, the bond should also sell for at least that figure, or substantially so, otherwise arbitragers could make a profit by acquiring bonds and converting them into stock with a greater market value It should be noted that even if, in the opinion of the bondholder, this situation were ripe for conversion because of the greater income from dividends, he will, if he is alert, only convert when the market prices make conversion the cheaper way of acquiring stock If the bonds should sell for 135 and the stock for 130 in the above case, it would be cheaper to acquire the stock by selling the bonds and buying the stock with the resultant cash than to convert [21] When the bonds pay more income, they should sell for somewhat more than the stock into which they are convertible

2 Another situation in which conversion is indicated, even though income is not advantageously increased, is that in which the bond with this privilege is about to suffer a loss of value either through (a) expiration of the right, (b) a change in the conversion ratio to a less attractive basis, or (c) the redemption of the bonds Thus, in 1925 the New York Central Railroad Company Convertible Debenture 6's due 1935, convertible at the rate of $105 par of bonds for $100 par of stock, were converted into stock because the privilege expired May 1, 1925 Up to that time, the 7 per cent dividend on the stock had not been sufficient to cause the conversion of the bulk of the bonds

At other times when a bond with a changing conversion ratio approaches the time when the change is about to occur, the holder may find it necessary to convert in order to avoid a loss in the value of his holdings [22] Thus, a certain bond, currently convertible into 28 shares of common stock for each $1,000 of par value, might be approaching the time when the conversion ratio would fall to 25 shares Suppose the stock were selling at $50 per share, although paying either no dividend or a nominal one, so that increased income would not provide a motive for conversion But at a price of $50, 28 shares of stock, and therefore a $1,000 bond, are worth $1,400, which figure would fall to $1,250 when the conversion ratio falls to 25 shares Failure to convert would mean losing just so much of the value of the privilege

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[21] Sometimes bonds sell for more than either the interest they pay or the market value of the stock into which they can be converted would appear to justify A possible explanation may lie either in (1) the desire to speculate by some who are barred from stocks by legal restrictions that force them into the bond market, thereby pushing bonds to an unnaturally high price; or (2) a preference for speculation in bonds because their loss possibilities through market decline are less than those of stocks

[22] This change in the conversion ratio may result from a provision that changes the ratio when a certain amount of the issue has been converted, or when a certain date has passed The first type of changing ratio is illustrated by the Consolidated Gas, Electric Light, and Power Co of Baltimore convertible 2½'s, mentioned above,

Similarly, when the market value of the common stock into which a bond or preferred stock is convertible is substantially above the call price, the corporation may force conversion by calling the issue for redemption Holders will find it profitable to convert into common stock that has a value in excess of the call price, rather than accept the latter amount

3 A third situation calling for conversion arises whenever, through inadvertence, the market price of a convertible bond falls below the price justified by the market price of the stock into which it is convertible Such a situation would necessarily be temporary, for arbitragers would hasten to bid for the undervalued bonds in order to convert and sell the resulting stock for profit This condition is rare, as it can only occur when owners of bonds, desiring to sell, overlook the opportunity for a better price by exercising their conversion privilege and then selling the stock

**Bonds with purchase warrants** Another method by which the bondholder may be given a call on the stock of a company and thereby be allowed to participate in its future growth is through the use of purchase warrants attached to the bond Thus the original purchaser of a $1,000 Sinking Fund Gold 8 per cent bond of the Pathé Exchange, Inc in 1921, received also a detachable warrant entitling the holder to purchase at any time before the close of business on September 1, 1931, 40 shares of Class A common stock at $25 per share This right had slight value at the time the bonds were put out, since the stock was then selling below $25 per share [28] The writer recalls the expression of surprise that came over the face of an elderly lady who came to his office one

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the second type, by the American Telephone and Telegraph Co 4½'s of 1939, which were convertible at $180 per share in 1930, $190 during 1931 and 1932, and $200 from 1933 to 1937, inclusive, with a provision protecting against dilution, as in the case of stock rights

[28] Note that even before the stock reaches the subscription price stipulated in the warrant, the instrument has some speculative value as an option or call on the stock In the same way, a conversion privilege can have market value even if the stock into which the bond is convertible has so low a price as to make immediate conversion unattractive

day in August 1925, and, upon inquiring whether a certain piece of paper which she handed to him was worth anything, learned its real value An examination had proved the document to be a detachable warrant entitling the holder to purchase 40 shares of Class A stock of Pathé, Inc at $25 a share The market quotation for the stock at that time was $80 per share Her warrant was worth approximately $2,200

The value of purchase warrants depends, therefore, on the future prospects for an advance in the value of the stock of the issuing company above the price stated in the warrant A corporation generally issues such bonds only when its credit is not especially high At such times additional attractions must be given to prospective investors, if they are to be induced to purchase the bonds of the company at a price satisfactory to the issuing corporation The holder of the bond may obtain this profit either by buying shares of stock from the company or by selling his warrant (which is usually transferable) on the market The nondetachable warrant is generally somewhat less valuable than the type that can be separated, partly because its nondetachability prevents a separate evaluation of it by the speculative type of buyer who would value it most highly and does not wish to make a heavy commitment in bonds, and partly because its life is more likely to be terminated by the redemption of the bond

**Money of payment.** With the conclusion of our discussion of the more important aspects of the contractual relationships of the various types of investment, it is appropriate to consider the "money of payment" problem because it represents an attempt to bridge the economic gap between the creditor and ownership forms of investment Regardless of protective provisions, all credit instruments, even those of the highest investment quality, possess one serious weakness they can suffer a loss of purchasing power through a rise in the price level This may create no investment problem for a financial institution that has itself incurred large dollar liabilities and needs a fixed sum of dollars to keep solvent For the individual or endowed institution that has to use income to care for living costs, the problem is central Whatever the weaknesses of equity investment, either in common stock or real estate, they have an advantage at this point, in the tendency of their income to adjust to price level changes even though the adjustment may be tardy and inadequate

After the greenback and free-silver agitation and legislation between the end of the War Between the States and the end of the century, creditors adopted a protective provision against currency debasement by stipulating the "money of payment" Debtors were required in the case of corporate and civil bonds and even of real estate mortgages to agree to pay interest and principal in gold dollars of the "present weight and fineness" The use of this provision was widespread When the gold standard was suspended in the United States in 1933, the Supreme Court decided that under the constitutional power of Congress to regulate the value of money, the government had the power to void this "gold clause" in its own bonds and those of debtors generally Thereafter, debt instruments could be made payable only in "lawful money," even though, after a series of reductions in the gold content of the dollar made at that time, the government has since kept the gold content at a constant figure

Although the gold standard is a restraining influence on an improvident government, it is far from a complete solution of the problem of purchasing power instability as is evident from the record of price level changes under the gold standard In the years immediately preceding the devaluation of the gold dollar (1929–1933), the price level declined by one third, while no change occurred in the gold content of the dollar Bank failures had reduced our deposit currency by about one third in those years On the other hand, in the decade of the 1940's, war finance expanded our deposit currency greatly and laid the basis for postwar inflation In this decade, both the volume of currency and its purchasing power were greatly changed, while the gold content of the dollar remained unchanged Even though weight is given to other important price level influences, such as volume of trade, business confidence, and the rate at which the public spends its dollars, it is apparent that the gold standard by itself is insufficient protection to the investor against changes in the purchasing power that may be said to grow out of monetary factors

The extent of this problem may be visualized by studying the more extreme fluctuations that have taken place since 1865 as they are shown in Figure 28 If the 1913 dollar is used as a base and regarded as worth 100 cents, the average of wholesale commodity prices was such that in 1865 this dollar would have been worth 40 cents, the result of the peak inflation of prices at the end of the Civil War After 1865, a long period of declining prices brought the purchasing power of the dollar up to 150 cents in 1896; then it fell slowly until World War I, but rapidly as war inflation boosted American prices, until at the peak in 1920 it was worth about 40 cents again During most of the following decade, the dollar averaged in the neighborhood of 60 cents, but rose during the depression to about 80 cents, after which the movement was reversed These relative values are based upon purchasing power as measured by the wholesale commodity price indexes of the United States Bureau of Labor Statistics

The reader who prefers to think in terms of the cost of living rather than the wholesale price index may trace the same idea through the cost of living indexes prepared by the same Bureau of Labor Statistics This price index is, of course, the reciprocal of one that shows purchasing power When prices rise, the cost of living will fall, and vice versa However, the cost of living indexes are based upon retail prices, whereas the purchasing power index was constructed on the basis of wholesale commodity prices The cost of living indexes were selected for years that would show the swings in prices

COST OF LIVING INDEX NUMBERS FOR DECEMBER OF EACH YEAR*

| | | | | | |
|---|---|---|---|---|---|
| 1913 | 72 | 1929 | 123 | 1940 | 101 |
| 1915 | 73 | 1930 | 115 | 1942 | 120 |
| 1917 | 98 | 1932 | 94 | 1945 | 128 |
| 1920 | 138 | 1935 | 94 | 1948 | 163 |
| 1922 | 120 | 1936 | 100 | 1949 | 159 |
| 1925 | 128 | 1939 | 100 | | |

* United States Bureau of Labor Statistics

The bondholder with an income fixed in dollars finds his buying power enhanced by deflation but cut by inflation To meet this problem, the late Professor Irving Fisher, a long time student of this problem and a leading advocate of monetary stability, devised the stabilized bond for a company with which he was associated, the Rand Kardex Company, in 1925[24] The pertinent provisions of the Rand Kardex Company stabilized bonds read as follows

> The Rand Kardex Company, for value received, hereby promises to pay the registered holder hereof on the first day of July, 1955 (place of payment), such sum of money as shall possess the present purchasing power of one thousand dollars ($1,000) with interest thereon at the rate of 7 per cent per annum, payable quarterly (dates), in such sums as shall, at the respective times of payment, equal in purchasing power one and seventy-five one hundredths per cent (1 75%) of said purchasing

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[24] This bond is fully described in an article appearing in the *Annalist*, November 13, 1925, written by Professor Irving Fisher Professor Fisher was a strong advocate of a stabilized dollar See Fisher, Irving, *Stabilizing the Dollar* (New York The Macmillan Co, 1920) and "Our Unstable Dollar and the So-called Business Cycle," *Journal of the American Statistical Association*, June, 1925, pp 179 ff Professor Sumner Slichter has proposed that the United States should offer Savings bonds in this stabilized form

> power of one thousand dollars ($1,000), all to be based upon an index number of the prices of commodities defined and fixed in accordance with the amplified statement below.
>
> The index number of the prices and commodities employed hereunder shall be the well-known index number of wholesale prices of the United States Bureau of Labor Statistics as published each month, subject to such modifications, amplifications, and changes of method in making and computing the same as shall, or may, be made by said bureau from time to time.
>
> If as of any date, the index number of the prices of commodities shall remain at approximately the present level, that is to say, if it does not rise or fall as much as one-tenth part of the level fixed as of July 1, 1925, i.e., 157.5, then the amount to be paid as principal shall be one thousand dollars ($1,000), and the amount to be paid as interest on any quarterly interest date shall be seventeen dollars and fifty cents ($17.50).
>
> In case the index number as of any due date shall be found to be more or less than that fixed for July 1, 1925, by as much as one-tenth part of said index number of July 1, 1925, then, for every full one-tenth rise or fall of said index number, there shall be added or subtracted, respectively, one-tenth of the payment then due, said one-tenth being $1.75 for any quarterly payment of interest and $100 for the principal sum.

Our study of this unique instrument of corporation finance is warranted only because of the emphasis that it places upon the purchasing power problem so important to the individual investor. The method of gearing interest payments to the cost of living index now sounds a note made familiar by provisions embodied in the labor union wage agreement of certain large corporations after World War II. The bond itself was paid off a short time after its issuance and its example is not expected to be followed in the immediate future. The chief market for bonds is made by institutional investors like life insurance companies and banks whose problem is to meet dollar liabilities, against which they must hold assets that will maintain dollar solvency. Consequently they would not be interested in such an obligation. Corporate borrowers, on the other hand, are likely to be doubtful of an untried novelty even though they might find it easier to pay their obligation on such a bond that would require high dollar payments during inflation and lower amounts in deflation. Those individuals who are aware of the purchasing problem and who invest their own money rather than place it in financial institutions are likely to find common stocks and real estate a sufficient substitute for the stabilized bond.

Nevertheless, the stabilized bond focuses attention on the problem of the instability of our money. With whatever skepticism the prospect of success in producing greater monetary stability may be viewed, progress in that direction is admittedly most desirable Never has more effort or discussion been devoted to the problem Even partial success would be most valuable not only for the investor but for the community generally because of its relations to business stability and employment

**Conclusion.** Without attempting an exhaustive treatment, this chapter has been designed to review the more important instruments of investment First, the general and common characteristics of the creditor and ownership instruments of investment were covered Then, the more important variations of the customary arrangements, such as the noncumulative, participating, "income," convertible, and purchase warrant features Familiarity with arrangements for retirement through sinking funds, serial maturities, and call features are also necessary in investment work

This discussion of the instruments of investment will have failed in its purpose if the reader does not also recognize the equal importance of the character of the issuer to that of the legal form of his investment Issues with weak features, such as the noncumulative preferred stock and the junior income bond, may come to enjoy good standing as a result of the financial strength of the issuer, while the form of the first mortgage contract may prove an investment delusion when issued to excess or by a weak borrower. The careful investor will study both the specific provisions of each investment he contemplates purchasing, which often take on special importance in times of stress and change, and the quality of the income support behind that investment

# 4

# Determinants of Investment Policy

The early literature of investment sometimes discussed investment qualities as abstractions, as though there were an ideal investment Investments with these desirable qualities—chiefly "safety of principal and income"—were the objective of a wise and "scientific" policy The passage of time has led to a wider recognition of the varying needs of different investors, both institutional and individual Before taking up the analysis of specific fields of investment, the investor should be armed with a check list, as it were, of the considerations, or determinants, that enter into the recipe for a policy that fits the needs of the particular investor The right investment policy, like the right pair of shoes, is one that fits the customer and his pocketbook The fitting will sometimes change with time

With a check list, the reader of the later chapters that discuss the several fields of investment can see how they are likely to supply the qualities needed in different situations When the survey has been completed, our study will conclude by reviewing the problems of investment policy in its practical application. The bricks of individual securities or other property will be seen to fit into the construction of a house of investments most suitable for the particular situation This treatment will not preclude frequent reference throughout the discussion of the various fields of investment to the qualities existing in each field and how those qualities have caused them to be acquired by certain classes of investors The concluding chapter will, therefore, be in the nature of a summary of matters of policy

One check list of considerations or determinants of policy that distinguish different investments as to suitability, on the one hand,

and that represent the needs of the investor, on the other, might be reduced to the following

1. Recoverability of principal
    a) Through maturity
    b) Through resale Marketability and price stability
    c) Through financial institutions
2 Regularity of income
3 Purchasing power
4 Freedom from care
5 Tax status
6 Denomination, or size, of investment units
7 Rate of return

Other points that some may wish to add, others exclude, will also be discussed

**Recoverability of principal.** Writers still often refer to "safety of principal," but in these more sophisticated times when the purchasing power problem is more widely recognized than formerly the concept has lost something of its former clear meaning If the purchasing power of a given sum of money is ignored, as it must be by some financial institutions whose obligations are almost wholly to pay a fixed number of dollars, then safety of principal means the assurance of having a fixed number of dollars of principal on hand in the future as in the present For the individual faced with the problem of the cost of living, the kind of safety that returns his principal to him intact as to dollars, but with a purchasing power cut in half after a few short years, is distinctly illusory Principal is only kept "safe" for such an individual when it will buy as much as it did at the time it was invested Yet to discuss these two ideas—the preservation of principal as a fixed dollar sum and as a certain amount of purchasing power—we shall need to keep them separate in our check list if not in our discussion When discussing recovery of principal, under the present heading, we shall think in terms of ability to recover the principal sum in dollars except where stated otherwise The purchasing power problem will be thought of as another factor

Safety of principal, then, has its most useful meaning when the problems of those financial institutions obliged to pay fixed sums to creditors are under consideration This is the situation for banks, life insurance companies, and savings and loan associations Those who place their savings with these thrift institutions have the legal right to receive back fixed dollar sums While the individual would like to receive additional dollars during inflation in order to meet a higher cost of living, he would not be content to take fewer dollars when deflation occurs Even if he were willing, the legal position of the financial institution does not permit it to offer him less Regulatory authorities would promptly treat the institution as insolvent and require it to close its doors if it appeared to have failed in its primary duty of maintaining assets sufficient to meet its dollar liabilities

Under such conditions, any attempt by the institution to meet the purchasing power problem of the individuals who entrust their funds to it might have some success during inflation, but would almost certainly cause insolvency during deflation Those who use the thrift institutions as investment channels must ignore the risk of loss of purchasing power that goes with inflation in order to avoid those other risks that go with the ownership of tangible property In short, the business risks that go with ownership forms of investment have to be assumed if one would avoid the risks of inflation that go with debt forms of investment Some individuals will prefer to avoid one risk, some the other. The difficulties or the lack of familiarity with ownership forms of investment has led many individuals to prefer the inflation hazard to the business risk Moreover they prefer to bear the uncertainty of purchasing power rather than of the dollar amount of principal they would recover if they elected common stocks or real estate rather than savings deposited in financial institutions So long as the outlook for inflation is no more threatening than that of deflation, there is no special pressure to assume the risks of ownership Economists are likely to conclude that the solution of the problem created by inflation for the investor who uses the financial institution cannot be met by changing the investment policies of the latter without a radical change in their very nature These institutions must continue to take the "old-fashioned" attitude toward "safety of principal" The most satisfactory approach to the problem would appear to be to direct our national economic policies so as to preserve the integrity of our money Stabilization of the buying power of our dollar would be the most desirable and fundamental solution of the difficulty.

But further analysis of the "safety of principal" concept is necessary Let us ignore the matter of purchasing power for a moment, or else assume that the prospect is for a price level that is as likely to move in one direction as the other In this situation if one were asked to recommend a "safe" investment, he might recommend the purchase of a twenty-year bond of the United States Government By all the usual standards such a recommendation would seem as safe as one can imagine Yet within a year the purchaser seeking to recover his principal by selling the bond might find the market price lower by a number of points If the price had declined by as much as 5 per cent the question might be raised as to "safety" The investor is just as certain as he was originally that the interest and principal will be paid promptly as they become due A distinction appears, however, between safety of principal as it relates to the ultimate payment of the bond, and the ability to recover the original principal by resale in the interval between purchase and final maturity

**Marketability and stable price.** If the investor is likely to need his principal before maturity he must seek two qualities, marketability and stable market price Marketability is usually defined as ready salability at a price not materially lower than that at which it can be bought In general, an article or an investment that is standardized and widely owned is most marketable Thus, a bond of the Federal Government or the common stock of a large corporation like American Telephone and Telegraph Company or General Motors Corporation, both widely owned, is likely to have the highest degree of marketability. In this respect, a very safe bond of a small local corporation may have inferior salability as compared with the highly speculative common stock of a large corporation A piece of real estate typically has limited marketability as compared with a widely owned common stock, even though it may have superior quality as an investment Real estate ordinarily suffers from its lack of standardization, each unit having its special characteristics, from its appeal only to a local market, and from the size of the investment required for its purchase Incorporation and the use of stocks and bonds has done much for corporate investment Such securities represent convenient units of investment that come to be widely known and widely owned

Price stability, the other essential for recovery of principal by resale, is found best in investments that (1) are fixed in their terms of payment both as to income and principal, that is credit instruments, (2) are subject to little uncertainty as to prompt payment, and (3) are of relatively short maturity The absence of all of these requirements indicates why a common stock or a piece of real estate is likely to have the widest price fluctuations Market price is the valuation that the community places upon the future stream of payments *The more determinate those payments, the less fluctuating the price should be*

Even bonds may fluctuate considerably The feeling of certainty, that is, the estimate of risk, may change Thus, if one purchases a railroad bond of only medium quality and the earnings outlook improves while the debt is reduced, we may find the market reducing its estimate of the risk involved Price should improve Put in mathematical terms, the market is discounting the future payments at a lower rate of yield than before because a lower premium for risk over the riskless rate of interest seems reasonable A common way of judging risk for a marketable bond or preferred stock quickly is to find the rate of yield that it returns on the going market price. High yield suggests a high risk estimate, and vice versa In general, highly rated securities tend to show less change in this matter of quality rating than do the more poorly rated speculative securities Consequently, the largest opportunities for market appreciation are among these less well-rated issues rather than among the choicest bonds Similarly, such commitments offer the greatest possibility for mistaken judgment and for market losses Among top quality bonds, the risk is relatively small and the only quality changes that can occur are in a downward direction

Even the best bonds may fluctuate, however, with changes in the general level of interest rates When the interest rate moves up the price of existing bonds has to decline until they offer a return on their market price consonant with the higher interest rate Bond prices, then, fluctuate in the reverse direction from interest rates Properly speaking, bond prices merely reflect the going price of capital, or level of interest rates

The amount of price fluctuation is affected by a final factor, maturity, or the length of time the instrument has to run until it is due The shorter the maturity, the less the opportunity for resulting price fluctuation, assuming there is no doubt about the principal being paid promptly A bond tends to be held closer to its par value as it approaches the final maturity Put in mathematical terms, valuation can change but little as a result of a change in the discount, or interest, rate when maturity is close at hand For a bond with but one year to run, a one per cent change in price makes a full one-point change in the yield, while a two-year obligation has to decline nearly two points to bring about the same yield change Small price changes are sufficient to bring the price of short-term obligations into line with a new level of interest rates Thus a 3 per cent bond must decline only from par (100) to 99 to raise the yield from 3 to 4 per cent if it has only one year to run to maturity, a two-year bond would have to drop substantially to 98 to effect the same adjustment, and a perpetual bond, that is one without maturity, would have to drop 25 per cent to a price of 75 to make its $3 of income a 4 per cent rate of return.

Since preferred stocks are such perpetual obligations from the standpoint of yield calculation, here is one of the reasons why they show greater market fluctuations as a class than do bonds

Probably a fair generalization of the subject of price fluctuation would be that the very wide price movements of common stocks and real estate are primarily the result of changing estimates of the size of the future income stream, and only secondarily the result of a changing rate of discount (or rate of capitalization), preferred stocks, however, have a typically fixed income and probably their price changes, except when dividends are actually passed, result chiefly from changes in the estimate of risk, or quality rating, of the particular stock, bonds with their higher average quality fluctuate more largely because of changes in the basic (or riskless) interest rate United States Government bonds, for example, change in market price in response to movements of the interest rate, while industrial preferreds are more frequently moved by changes in estimated quality, even though the interest rate is a basic factor and is the dominant factor for some top quality preferreds A very low-grade bond will, on the other hand, show the market characteristics we have ascribed to preferred stocks

As among bonds of investment quality, the longer the maturity the greater the potentialities for price fluctuation A partial counter-influence is the tendency of yields for short maturities to fluctuate somewhat more widely than for long maturities (See Figure 22 ) This tendency is insufficient to negate the general relationship we have described between short maturity and price stability [1]

**Recoverability through financial institutions.** One of the prime advantages for the individual of direct investment, that is through a financial institution as an intermediary, is the ready recoverability of principal that it offers as compared with what one could obtain by placing ones own funds in the same things the institution buys Thus, a savings bank may invest most of its depositors' funds in long-term bonds and first mortgages and yet offer the depositors the right of withdrawal on short notice or even on demand Such a practice depends upon the greater predictability of the cash needs of a group of investors than of an individual While an individual must prepare for any uncertain personal emergency, such as illness or unemployment, the combined savings of a whole group of bank depositors may be quite stable This phenomenon was illustrated by the remarkable stability of deposits of mutual savings banks during the trying conditions of the Great Depression in the early 1930's

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[1] Occasional minor exceptions may occur There have been occasions in the market for U S obligations when those seeking liquidity have concentrated their holdings in short maturities, and then when they concentrated their selling to obtain cash, the selling pressure was greatest in the short maturities With heavy selling taking place in short maturities and very little in long maturities, the greatest price movements might, for a short time, appear in the former

Some have been critical of the life insurance companies' investment policy in this matter of recoverability of principal, or liquidity Under the standard life insurance contract, the company agrees either to lend or to permit the withdrawal of what is known as the cash surrender value of the policy These values are substantially equal to the whole reserve liabilities of the company, which, in turn, are the source of the great bulk of the invested assets Critics ask how these companies can assume such a huge demand liability and still invest in real estate mortgages and long term bonds In the past, the reason has been that the major life companies have enjoyed a growth trend such that even in depressions the cash receipts from policy-holders have exceeded all current costs and withdrawals Even where the individual company has some excess of withdrawals, the need for cash can be met by repayments on debt investments or minor liquidation of some bonds A group of savers will always require less liquidity than the individual because the saving of some offsets the dissaving of others

The greater practical hazard for these financial institutions, whether life insurance companies, banks, or savings and loan associations, is less a lack of liquidity, which can be met by a suitable fraction of liquid investments, than either a panicky run of unreasoning withdrawals or losses from unwise investments that impair solvency Since insolvency of a few institutions may weaken confidence in others, each institutional group has a stake in the reputation of all Herein lies the common interest they have in suitable standards of operation and the safeguards of government regulation The economic injury that follows a drying up of the springs of credit and loss of confidence in financial institutions explains the general acceptance of regulation When the best efforts of the industry and of regulation fail, as in the early 1930's, more drastic governmental measures are likely to follow On that occasion, such confidence-instilling devices as federal insurance of both bank deposits (Federal Deposit Insurance Corporation) and savings and loan shares (Federal Savings and Loan Insurance Corporation) were established A similar purpose lay behind the creation of mortgage insurance by the Federal Housing Administration

If public confidence exists so that wholesale runs upon institutions are avoided, even a temporary but general decline in the market value of institutional assets need not be fatal The market itself is less likely to be upset by panicky declines in the presence of special institutions designed to lend to the financial institutions in times of stress The Federal Reserve banks were founded largely for the purpose of lending to member banks in times when credit grew tight because of a lack of public confidence Later, the Federal Home Loan banks were established to lend on the basis of real estate mortgages to member institutions, chiefly savings and loan associations In ordinary times, these "reserve" institutions are little used because the needs of the individual financial institution for cash are chiefly met by collecting on maturing investments or selling a part of their investments in the open market

Mention of these special banks designed to serve other financial institutions, suggests the utility of borrowing to meet a temporary need for cash. Collateral (or hypothecation) value, that is, the value of an investment as security for borrowing, is sometimes listed as an independent quality for an investment It is more convenient to remember it as it is related to the general problem of recovering principal When the need for recovery is only temporary it may be cheaper and more convenient to keep some fairly permanent securities that will be suitable for collateral rather than to keep a highly liquid fund that might earn little or nothing Those investments that are most liquid, that is, have both marketability and stable market price, make the best collateral, but even fluctuating value need not be too great a handicap for collateral if the amount of collateral is ample and the borrowing is actually temporary As a matter of safety, it is preferable to rely upon direct recovery of principal by liquidation rather than upon partial "recovery" by way of bank borrowing to meet cash needs Nevertheless, some investors will wish to consider borrowing as a possible source of needed cash for unexpected and temporary needs that may arise

Principal recovery is provided for with the most certainty by arranging investments that mature on a schedule that will match possible cash needs A secondary line of defense lies in holdings from which recovery may be had by resale For such purposes, debt forms of investment of high quality and short maturity are most satisfactory The third possibility, even though sometimes an uncertain one, is found in investments having suitable collateral value The individual's needs for principal recovery are greatly facilitated by financial institutions able to care for the liquidity demands of the public with an investment portfolio of investments of lesser liquidity than the individual would require, because of the greater stability of group needs over individual needs The social value is great of such institutions that can, on the one hand, give the investor an investment that has many of the virtues of ready cash and yet, on the other hand, put these sums to work at fairly long-term community purposes, such as factories, utilities, and housing Both the investor and the economy benefit.

**Regularity of income.** Instead of attempting to analyze the abstract quality, "safety of income," it seems more realistic to analyze the character of the income of the given investment and the kind of need of the particular investor This approach means the study of (1) the regularity, or stability, of income, (2) the degree of certainty in the estimate of future income, (3) the relation of the income to probable purchasing power changes in some cases, and (4) the rate of return After the study of the investment, we may ask how well it fits the investor's needs For some investors, the importance of recoverability, or liquidity, is so great that the consideration of income becomes distinctly secondary This is true for the individual wishing an emergency fund and the commercial bank investing funds received from demand depositors

The emphasis and attitude toward income is not the same for all investors Even among the financial institutions important differences exist The savings bank and the savings and loan association require less liquidity than the commercial bank. The rate that all of these pay to savers is either dependent on earnings or may be changed on short notice, even though as a practical matter it tends to be fairly stable Only the pressure of competition makes it necessary to pay a rate somewhat in line with that of other similar organizations In contrast, the life insurance companies issue policies for insurance and annuities that run for long periods of years on the reserves for which they guarantee to accumulate compound interest at a minimum rate Consequently they are under pressure to maintain earnings Sometimes, as after a considerable decline in interest rates, some contracts may become very burdensome Fortunately, in the past other sources of gain have enabled these insurance companies to meet their obligations even when, as in some actual cases, their average interest earnings have temporarily fallen below the average rate required to cover their accruing liability for interest On the other hand, the small demands for liquidity has made it possible for them to pursue a relatively nonliquid investment policy, thereby permitting a maximum rate of return with safety The investor who seeks liquidity is often obliged to sacrifice something in the way of yield

As for individuals, the emphasis upon income will depend upon whether the stronger need is for liquidity or fairly permanent investment in order to obtain income or build an estate The person of small means may feel that most or all of his savings should be in a form in which he can convert them readily into cash Under such conditions the liquidity offered by the banks, the savings and loan associations, and United States Savings bonds (which are discussed later in Chapter 18) offer a more satisfactory medium Any risk from loss of purchasing power by inflation is likely in such a case to be regarded as less important than the risk of adverse price fluctuations common to those forms of ownership investment that might serve as an inflation protection

After an adequate liquid fund has been accumulated, emphasis may be shifted to more permanent investments where income and possibly appreciation can be given more consideration Even then temperament and personal experience will result in widely different attitudes about what sort of income is satisfactory Some will believe the course of the price level is unpredictable and prefer the safety of a prior fixed income obligation to the more fluctuating and risky equity investment Others may regard the matter of monetary instability as so central that they will be willing to assume the risks of investment in common stocks and real estate as a part of a well-rounded investment program They would point out that so much of the average individual's resources are represented by life insurance, investment in thrift institutions, U S Savings bonds, and a retirement pension, all fixed in dollars, that he needs a counterbalancing factor in the form of equity investment The position might even be taken that some common stocks that pay no dividends in depression might have a place in a balanced investment program, provided that the income paid in good years was enough to average a fair return on purchase price The extreme income fluctuation of such holdings when added to an otherwise fixed dollar income would make the individual's total income more responsive to changes in the cost of living One can afford to lose some income in times of deflation if his purchasing power is maintained by a sufficient increase in dollar income during inflation years A fundamental question will always arise as to the adequacy of average income to compensate the investor for the risks he assumes of a substantial or even total loss of principal, which is so much more likely to occur in the ownership than in the debt investment field To distribute such risks, the investor must, like an insurance company, have sufficiently diversified holdings to permit his gains to average out against his losses

In short, many common stocks and real estate provide a type of income that has decided merits where the primary objective is purchasing power even though the adjustment of their income to the changing price level may be imperfect This need for purchasing power is not characteristic of the major financial institutions whose chief problem is to meet fixed dollar liabilities, but is of first-rate importance to individuals and to those institutions, such as religious, educational, and charitable organizations, that have to pay salaries and buy supplies Trustees for both individuals and philanthropic organizations have come to recognize this need increasingly since 1920

Until the recent growth of the investment company, which permits the ordinary individual investor to invest indirectly in a pool of diversified common stocks, one of the anomalies of the investment market was that thrift institutions, with their expert staffs for investment study, invested in relatively safe bonds and real estate mortgages, and the unskillful individual had to handle the more vexatious problems of common stock unaided The investment companies may well play an increasingly important part in making equity investment available in more suitable form for mass investment Probably the chief requirements for a suitable investment "package" to be sold in this market is that it provide expert management and diversification to minimize risk, and insure an income that will be responsive to general economic conditions Institutional investment management provides skillful aid on an economical and "ready made" basis for the groups which use it, in contrast to the more expensive guidance required where the individual handles his own investments but gets counsel and advice on a "custom made" basis

**Purchasing power** So much has been said in the preceding paragraphs on the "purchasing power" problem in connection with principal recovery and income regularity that little further need be added here Purchasing power has to be considered as it differentiates classes of investment and of investors. The matter tends to go unstressed when the country has price-level stability for any number of years as it did between 1922 and 1929 At such times, even the individual investor may regard it as an unimportant consideration When, however, the cost of living has been rising for a time as it does during or after major wars, he becomes acutely conscious of this problem and the need for a suitable hedge, or protection, against inflation When deflation comes, ownership investment tends to become "unsafe" and the individual finds it advantageous to retreat to a creditor position

An important factor slowing down business itself in such a period is that businessmen see the prices of their inventories declining and seek refuge in cash so far as possible. Borrowing and using credit generally becomes dangerous for him, so that total credit tends to contract. In the matter of fixed plant investment or home construction, the would-be builder is discouraged when he finds that construction prices are shrinking more in a year than he can earn in investment return or at least more than he can collect with relative certainty on a safe bond.

**Freedom from care.** While the first three interrelated points discussed above—recoverability of principal, income regularity, and purchasing power—are the most fundamental factors, there are some additional secondary matters in the selection of suitable investments. "Freedom from care" is one of these latter. The idea may be given two meanings. Most often it is used to cover the idea of work, effort, or responsibility involved in the care of a given investment. Occasionally it is used to cover the worry or concern that may be caused by the pursuit of a speculative or risk-burdened policy. The first concept involves the more objective and concrete aspect, one that can often be identified with actual costs, the latter is more subjective and difficult to measure.

A characteristic difference between putting one's capital to work in the field of investment and in a business of one's own is that the former is supposed to require no effort, while the latter involves one's personal skill and effort. Income from investment is regarded as capital return, income from one's business, a mixture of return for capital and labor. The study of capital commitment in a business of one's own must lie outside the scope of a book of this sort because the chief skills involved are those connected with the operation and administration in the particular field of the business. Skill in investment is a different matter. The investor-capitalist is the silent and inactive partner of industry.

In analyzing the profits from one's own business it is even difficult to distinguish capital return from labor return. Whatever the amount of earnings that are labeled profits rather than managerial salaries in the accounts, certainly their amount will depend primarily upon the skills of the owner-managers. The accounting division between net profits and management salaries often represents the convenience of the owners so that it has doubtful utility for economic or business analysis. Tax considerations are an important influence. The owners of an incorporated business will prefer to take out whatever they need for personal spending as salaries rather than dividends. Salaries reduce the taxable income of the corporation, subject to such limitations as the Internal Revenue Bureau may set upon their reasonableness Consequently such earnings pay only one income tax, that on the personal income of the owner, where earnings distributed as dividends would have had to bear the corporate income tax as well as the personal income tax On the other hand, if the owners wish to leave some of their earnings in the business, they may find it economical taxwise to show such amounts as profits, subject to the corporate income tax, rather than as salaries, subject to the personal income tax, if the latter is at a higher rate

When one turns from the active owner-manager of a business to the bystanding investor, it would seem that these questions would be resolved All investment, or property, income would appear to be simple capital return Yet closer study sometimes shows that not to be the case Real estate, for example, is a favored field of investment for many. Small owners, particularly, often manage their own property A possible measure of the fraction of the income which might be regarded as return for management would be the conventional percentage of rents paid to a real estate firm for that work An owner can always turn over the job to such a firm and some metropolitan banks find it necessary to care for real estate left to their care in trust accounts It could be argued, however, that in a service one performs for himself a stronger motivation for economy exists, and if an owner serves himself well he may reap some extra return that will represent this skillful effort rather than ordinary capital return Here is an element of "wages of management," self-management in this case

Once the search for managerial compensation is started, one finds it in various quarters A life insurance company may, for example, use the services of a local realtor or bank to collect payments on mortgages and see that the various provisions of the mortgage, such as prompt payment of taxes and insurance premiums, are carried out. The remuneration for this service might run from one half to one quarter of one per cent of the principal sum depending upon the size of the loan and the effort involved Here is an element that has to come out of mortgage interest Some very large insurance companies have set up their own service organizations to handle this service in large urban centers Here too, the investment income is the net figure after such costs are subtracted from interest income

Some have argued that direct investment in real estate mortgages is unsuitable for the widow type of investor because of the necessity for certain skills in management and for a certain firmness in administering collections if the investor is to be properly protected

But real estate is not the only field for delegated management of an investment The whole job of managing an investment fund may be turned over to the trust department of a commercial bank A fee will be charged for the work of supervising the fund and caring for the bookkeeping and handling of securities Such management has become quite common for the administration of funds left for one's dependent family under the terms of a will Some persons conscious of the virtues of independent, specialized, professional management have created trust funds during their lifetime These accounts may turn the whole problem over to a trust company or they may merely involve custodial work, that is, the physical care of the securities, the actual direction of the investment remaining with the creator of the trust

Professional advice is sometimes obtained from investment counselors In such cases, the investor retains the custody of his investments but obtains the advice of counsel He may, of course, reject the recommendations of his adviser Compensation is ordinarily based upon the size of the fund, with the fee ordinarily running from a half to one quarter of one per cent of the total market value Because there are a minimum number of problems involved in handling even the smallest fund, some counseling organizations do not care to accept the management of funds below a certain size This minimum might run from a figure of $25,000 to $100,000, depending upon the particular organization

The financial institution accepting savings for investment is a device for offering management on a wholesale scale The investor selects the institution whose general character and policies suit his needs Study of the cost of this service could be made by noting what portion of the investment income has been consumed by operating overhead Or, operating expenses may be compared with the amount of assets managed Just as the processes of production and distribution have been made more economical by the use of a standardized mass handling, so financial institutions have brought similar economies to the service of the investor

Mention was made at the beginning of the topic of how the term "care" is sometimes used in the sense of worry or concern over the hazards of investment Since one of the purposes of property accumulation is a sense of security, it is probably desirable to err on the side of investment conservatism in order to assure peace of mind for the investor However, this generalization should not be held to excuse too large a price being paid in the way of lost income by purchasing more of certain qualities, such as liquidity or tax exemption, than is useful to those who are to receive the income of the fund

**Tax status** High taxes by our Federal Government on income have made them a major factor in shaping investment policy Because of the constant search by the government for tax revenues, the tendency has been toward the inclusion of all kinds of income as well as to increase tax rates The one important class of investments with income fully exempt from income taxes is that of state and municipal bonds This special treatment was a result of a belief in the constitutional immunity of such income from federal taxation Today the belief in the constitutional character of this immunity is not so strong, but a sufficient advocacy of the exemption continues to make this field of investment a sheltering refuge from taxes But the lower yields reflect this advantage in tax status and each investor must decide whether the saving in taxes is worth as much as what will be sacrificed in lower yield For some who are subject to high income tax rates, the cost of exemption in the form of lower yield may be low enough to make these bonds a bargain

Other devices besides the purchase of tax-exempt bonds are available to minimize the tax burden The investor in common stocks is subject to double taxation, that is, first the tax the corporation pays on net income, and then the tax the stockholder pays on any dividends paid out of the balance of that net income However, if the corporation is able to retain some of its earnings and invest them in the business to advantage, the investor, at least for the time being, pays only one tax rate, namely the corporation tax It is true that the corporation rate is much higher than the highest rate paid by most individual taxpayers on their personal income The tax advantage in retained earnings is only a relative advantage compared to the double tax treatment accorded earnings that are paid out as dividends If the investor had received these retained earnings as dividends, he would have had only the balance after his personal income tax available for reinvestment in the stock of the corporation

If the investment of the retained earnings is successful, the corporation's common stock should grow in value at least as much as the earnings are plowed back The result of market appreciation is only taxed when and if the investor sells his stock and realizes a gain Gains realized from the sale of property are called capital gains and accorded special tax treatment at a lower rate than ordinary income if the property has been held long enough to make it a long-term gain When the individual is subject to high tax rates this more favorable treatment is valuable Well-to-do individuals who are interested in accumulation rather than immediate cash income find capital gains are an especially desirable form of gain as compared with ordinary interest and dividends

Certain other forms of income or gain are subject to no immediate tax under current laws When one buys a deferred annuity for old age, the accumulating interest on the premiums before the age of retirement is reached adds to the cash value of the contract but not to taxable income, whereas similar compound interest on a savings bank account would be taxable Similarly, any growth in the value of the reserve, or investment element, of a life insurance policy does not constitute taxable income unless one surrenders his contract and gets a cash value in excess of his premiums Likewise the growing value behind one's pension rights, whether private or under the Federal Old Age retirement insurance, which grow by a compound interest allowance, creates no immediately taxable income

Corporations can also benefit from the exemption of interest income received on state and municipal bonds, a point that is important to commercial banks Although not accorded as favorable treatment as individuals, corporations may also elect to be taxed at a special lower rate upon long-term capital gains Some thrift institutions also receive special tax treatment Thus, a qualified investment company that distributes substantially all of its income to its shareholders pays no corporation income tax Were that not the case, we should have triple as well as double taxation of corporate earnings in the case of dividend income received by these companies Mutual institutions are given special tax treatment so that little or no corporation income tax is paid There has been a tendency, however, to levy some income tax upon undistributed income of mutual savings banks and mutual life insurance companies, even though such amounts may be reservations to absorb losses of later years rather than ordinary surplus Whenever taxes are levied on financial intermediaries, the investor has just so much more inducement to invest directly and eliminate the extra taxation Because the smaller investor is typically unable to invest directly, his savings being accumulated in too small amounts, this taxation of thrift institutions would discriminate against those who are in the lowest income classification

Fuller treatment of the taxes that affect investment policy will be found in Chapter 24, which is devoted to that topic

**Convenient denomination** Little need be said about the unit cost, or "denomination," of the investment except to note that the actual market cost of a unit rather than any artificial par value is referred to The unit cost is chiefly important as it limits the availability of many investments for the investor of moderate means Thus, the cost of a mortgage, or a single bond, or a piece of real estate may be so large as to make its purchase difficult or impossible for many Where the conventional unit for most bonds (U S Savings bonds are an important exception) is $1000, the common stock equity of a corporation is usually divided into a sufficient number of shares so that their market value per share will be low enough for convenient purchase Typically the figure is under $100 per share When a common stock mounts above that figure, and sometimes even before, it is a common practice for the corporation to divide its shares either by a stock split up or a stock dividend[2] This division leaves the stockholder with the same proportionate interest in the total ownership interest of the corporation as before but he holds a larger number of shares with a lower price per share

Corporation bonds and shares are themselves a device for making convenient units of investment A single corporation mortgage might be so large as to make it an impossible investment, save for a few very large financial institutions, such as the life insurance companies The issuance of $1000 bonds against the mortgage makes the debt available in units suitable for a much larger number of investors Even though an institution bought a large block of such bonds, the smaller units would make them more marketable should resale be desirable at a later date Those interested in possible resale, like a commercial bank, would make more of this point than an institution like a life insurance company that generally holds till maturity

The financial institution meets the denomination problem of the small investor by accepting savings in small sums and often for odd amounts, as in the case of the savings deposit They then combine these sums to invest in larger units such as the real estate mortgage or the typical bond

**Rate of return.** The rate of return, or yield, is often included in the list of investment considerations or qualities Others might prefer to omit it for two reasons In the first place, they would argue that it merely represents one of the aspects of the second point, the matter of the character or the regularity of the income. The investor tries to get as much yield as possible subject to the limitations of the over-all policy requirements of his investment program

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[2] See Guthmann, H G , and Dougall, H E , *Corporate Financial Policy* (New York Prentice Hall, Inc , 2nd ed , 1948, pp 561–564) Occasional exceptions are found Some banks permit their stock to grow to a high figure believing that a high market price per share carries a certain financial prestige more useful in gaining business than is the modest inconvenience of a high unit price to stockholders Examples of high per share prices well over $1000 per share, are found in the stock of the First National Bank of New York and Christiana Corporation common stock The investor may find a high priced stock something of an investment bargain in that its price may be low relative to earnings and dividends because of the less convenient market price

In the second place, it can be argued that to give yield as a separate objective is misleading It implies that the rate can be increased if the investor wills it This point of view, it might be argued, underlies one of the most serious investment errors It is the kind of error made by one who asserts that he has to buy high-yield securities because his investment fund is so small that the income would be inadequate for his needs otherwise Far from being a solution, such a policy is likely to mean the purchase of risky securities most unsuitable for a person unable to bear risk and lacking sufficient funds to obtain the necessary diversification for such commitments High yield on market price is the market's reflection of what it regards as high risk of loss Under a system of perfect market appraisals of the future, such higher yields would be expected to be counterbalanced by later losses that would reduce income to a parity with the riskless rate of interest When such risks are assumed, the excess interest should not be regarded as ordinary income but as a reserve for losses until such time has passed that the investor's good judgment or good fortune has been demonstrated It is, of course, possible that the individual investor may outjudge the market in his appraisal of risk or that artificial investment barriers may prevent the ready flow of capital into certain fields so that the yields may represent an excessive appraisal of risk

However, in spite of these arguments, many will feel that the rate of return should be included in our check list to emphasize its place as a central consideration in investment decisions Its inclusion brings to the fore the idea that the investor may pay too much for certain qualities such as liquidity, freedom from care, and the like, unless he is constantly weighing the various investment opportunities in terms of those other qualities *and the rate of return*

The problems related to rate of return and some factual background on available yields in various fields are the subject matter of the next two chapters The importance of the subject is reflected in the frequent reference to the same point throughout the rest of this book

**Diversification** Some would add the item of diversification to the list of investment considerations It is not, however, so much a quality of the various kinds of investment as it is of policy for an investment fund The word itself has a varied connotation An investment portfolio may be diversified among different companies and different properties Diversification should also involve spreading funds among various fields of investment The misfortunes that have sometimes overtaken a favored field of investment explain this need During the late 1920's the railroads were thus favored partly because they included so many companies that had a long and satisfactory dividend record Those who concentrated in this field, especially in common stocks, suffered considerable losses during the 1930's On the other hand, the oil companies associated with the uncertainties of extracting a natural resource made an excellent record in the same period The automobile had made gasoline a staple purchase in the consumer's budget

Diversification may also include the idea of geographical spread so as to avoid the hazards of crippling losses from local disasters, such as fire, flood, war or regional economic troubles Some American companies have such a spread of operations over the nation's map that they enjoy a geographical diversification such as a European could obtain only by investing in several countries Examples are numerous and include the American Telephone and Telegraph Company, many of the great petroleum companies, and the chain store organizations Some companies even have an international area of operations, such as the Standard Oil Company of New Jersey and the Texas Company

Some have even suggested applying the idea of diversification as between ownership and debt forms of investment where that is possible Ownership forms of investment could serve as some protection against the evils of inflation, debt investments would serve as a protective function against both deflation and certain business risks Probably, a more common phrase to cover this objective is to refer to a fund that employs the idea as a "balanced fund"

Diversification, although a useful technique for reducing risks should never be thought of as a simple and complete answer to the problem of risk In the field of investment, risk is not a readily predictable hazard that can be expressed as a determinate amount like an insurance premium As valuable as the record of past performance may be to alert the investor to his problems, it provides no specific and certain measure of losses to come, even though it may be suggestive The worst risks that afflict the investor are in the nature of catastrophic hazards that are relatively unpredictable from the empirical experience data of the past The gravest risks are from war, monetary disturbances, and technological changes, and have to be borne or at best be met through such foresight and judgment as experience and education make possible

**Legality** While not an inherent quality of a given investment, some states make certain investments "legal" for certain regulated investors Thus, certain financial institutions, such as savings banks, life insurance companies, and savings and loan associations are regulated with varying degrees of strictness under various state laws, which apply to those institutions incorporated in their jurisdiction or which seek to be licensed to do business there[8] Trustees who have not been given freedom to invest as their own discretion dictates in the trust agreement are also bound by the laws of the state The law may be very general, merely specifying a rule of prudence, or give precise lists of eligible or "legal" securities and other classes of investment For a new bond to be reported as "legal for savings banks" in various leading jurisdictions will add considerably to demand and influence purchases by investors who are not regulated but who follow a conservative policy Naturally, the yield will tend to be lowered by such an influence On the other hand, persons or institutions not restricted by such legal rules may on occasion find investment opportunities favorable in the matter of yield simply because the investment has failed for some reason to make the legal list It is generally felt that the wide differences between the yields of bonds and stocks that developed after 1930 would be greatly reduced if common stocks were legally permitted for some classes of regulated investors in the more important states (See Figure 23 )

**Conclusion.** The general considerations discussed in this chapter will take on added significance as we see their more specific application to various kinds of investments and different kinds of investment programs that are discussed in later chapters That application will require a constant use of judgment that recognizes the probability of continuous changes in our economic life The broadest possible familiarity with the world we live in is invaluable in the world of investment

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[8] *Moody's Manual of Investments, Governments and Municipals* (annual) reports these legal restrictions for each state and often gives the actual lists of "legal" investments

# 5

# The Return on Investment

Since the central problem of investment is to obtain the highest return on investment without sacrificing those qualities essential to the particular investor, that subject will be a recurring one. This chapter provides the reader with (1) a brief statement of the theory of capital return, (2) yields that have been obtainable from bonds and stocks over the past, (3) factors that explain yield differences, and (4) the return earned in certain major fields of business upon book investment (that is, upon invested capital as it is recorded in business accounting records). The following chapter will survey some performance results in the matter of investment return, particularly in the field of common stock investment. The yields at which the investor buys securities should be regarded as promise, or expectation, rather than performance. The latter can only be judged by examining what has happened to various funds over a period *after* the act of investment.

**Interest defined.** In the field of economics the term "interest" is used to denote the price paid for the use of capital. Interest, therefore, is that share of the total income of society that is received by the capitalist. Just why there should be a return on capital is in the main a question for the economist, yet the answer may be suggested here at least in its broad outlines. The accumulation of capital implies the exchange of present goods for future goods. For example, the man who bought a $1,000, 3 per cent bond in 1950, which matures in 1960, has given up a definite present sum, which he might have spent for goods. In return for this, he gets the promise of $1,000 at a distant time, plus a certain additional amount, called interest, which he is to receive in the interim. We might simplify matters somewhat if we suggested that all the future sums that he expects to receive, amounting to \$1,500, have a present value of \$1,000 This situation, of course, implies that future goods are at a discount in terms of present goods, and this is exactly the attitude taken by most individuals The majority of people would prefer \$1,000 today to a like sum a year from now, or, having \$1,000 today, they prefer to spend it rather than to defer the enjoyment therefrom for a period of years The accumulation of capital, therefore, involves a distinct sacrifice on the part of most individuals who save, and is stimulated only by the expectation of receiving a larger sum in the future than that given up in the present

But why, on the other hand, should people be willing to pay a premium for present goods? A partial answer to this question has already been suggested Capitalistic methods of production are *more productive than direct methods that do not employ machinery* Those who have command over capital goods are able to make use of them in ways that yield a return in excess of the amounts borrowed Hence, they are willing, if necessary, to pay back a greater sum in the future than that borrowed It is the interplay of these two forces that gives rise to interest, and the rate that emerges may be regarded as a function of the demand for, and supply of, lendable funds [1]

**Normal, or long-time, interest rates; the yield on British consols, 1849–1910.** The pure rate of interest is the price paid for the use of capital with no premium for risk In practice, the rate of interest quoted on a given loan is generally made up of pure interest and an additional amount, which is the investment market's measure of the risk involved in that transaction—the possibility that some unforeseen circumstance may arise that will prevent the borrower from living up to his part of the contract, or the difference between the pure rate of interest and the rate quoted may cover the expenses involved in handling the loan. The latter is the case where the loan is small in amount or where there is expense of administration, as in the case of small real estate mortgages. In discussing the pure rate of interest, therefore, one must consider loans that, so far as possible, are regarded as devoid of investment risk and investment cost, otherwise the apparent return will include not only interest but other elements of income as well.[2] For many years prior to World War I, the British consols were considered to be as nearly riskless as any type of investment. It is true, of course, that obligations of the United States were so considered after 1880, but until that time it cannot be said that United States Government bonds were regarded with as much favor as those of the United Kingdom. Consequently, a study of the yield on British consols, for the period from 1849 to 1910, should give us a fairly definite idea of the range of pure interest rates during the latter half of the nineteenth century, and the first decade of the present century in the leading capital market of the world.

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[1] There are divergent views among economists regarding the nature of interest. The Austrian school, led by Bohm Bawerk, stresses the advantages arising from indirect, or roundabout, methods of production over direct methods as giving rise to the demand for capital, and hence, as the essential factor in determining interest rates, although some attention, it is true, is given to the time preference that present goods enjoy over future goods Irving Fisher, on the other hand, bases his theory of interest on the time preference of present over future goods, suggesting, however, that the advantages accruing from capitalistic methods of production must be considered as a factor in stimulating time preference See Fisher, Irving, *The Rate of Interest* (New York The Macmillan Co , 1907) Professor Frank Fetter went somewhat further than Professor Fisher in the development of the psychological theory of interest and virtually excluded the question of productivity (in the sense just discussed) from the problem See Fetter, Frank, *Economic Principles* (New York The Century Co , 1915), Vol I, Chapter IV Frank W Taussig in his theory of interest stresses the factors governing both the supply of, and demand for, capital See his *Principles of Economics* (New York The Macmillan Co , 4th ed , 1939), Vol II, Chapters XXXVIII to XL, inclusive.

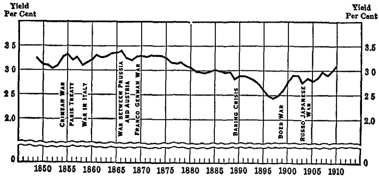

Figure 3. Yield on British "Consols" 1849—1910.

It is apparent from Figure 3 that the pure rate of interest varied, during the 62-year period studied, from 3.3 per cent to slightly under 2.5 per cent.[3] From 1849 to 1882 the rate was maintained at over 3 per cent. From then until 1897 interest rates declined almost constantly and thereafter rose sharply until 1901 From that year until 1910 a further but more gradual rise is noted

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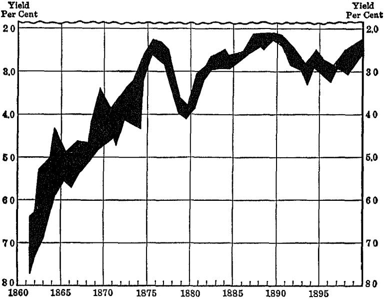
[2] On page 117 we shall consider more fully the matter of differences in rates of return on different classes of investment in the same market to account for risk and other factors.

[3] Taken from data presented by Williams, T. D., "The Rate of Discount and the Price of British Consols," *Journal of the Royal Statistical Society*, Vol. 75, p. 399. For a chart of the price range of British 2½ per cent consolidated stock, 1903–1932, see *New York Stock Exchange Bulletin*, September, 1932. The annual range of French 3 per cent irredeemable rentes is charted in the same bulletin in October, 1932. Corresponding yield data for corporate bonds prior to 1900 are not shown in Fig.

Accompanying these long-term fluctuations in interest rates are to be found fundamental changes in other aspects of our economic structure Variations in the price level, changes in the world's supply of gold, changes in methods of conducting business, and, above all, a quickening in our entire economic life are among the phenomena that are familiar

**Interest rates in the United States** The course of United States government bonds from 1860 to 1899, is illustrated in Figure 4 Starting from a low point in 1861, when the average yield was as high as 7 5 per cent, the price of these obligations advanced until, in 1889, the average yield on market price was but little more than 2 per cent



*H F Arens and J R Bancroft, "The History of Bond Prices," Annals of the American Academy, Vol 88, p 15*

**Figure 4 Course of Government Bonds in Post Civil War Period (on a Yield Basis)**

These erratic fluctuations are explained in part by the varying success of our civil government in the war, and in part by the in-

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ure 3, but see Mitchell, W C, "Rates of Interest and the Prices of Investment Securities," *Journal of Political Economy,* April, 1911, Vol XIX, p 269 See also Macauley, F R, "The Construction of an Index Number of Bond Yields in the U S, 1859 to 1926," *American Statistical Association Journal,* March, 1926, Vol XXI, p 27.

troduction of a system of national banks, whereby government bonds were required as collateral to secure note issues[4] The rather sharp drop in price, and the corresponding advance in yield from 1877 to 1879, in contrast to the previous advance in price, was due in no small degree to the doubt raised during that period as to the ultimate resumption of specie payments and the discharge of our government debt in gold rather than in paper currency. As soon as that point was settled, the price of government bonds rose sharply and the yield on such obligations dropped to a point even below the yield on British consols at that time

The special market that United States obligations enjoyed as a result of the circulation privilege (security for national bank notes) destroys their value as a measure of true interest rates in this country from the time that they became almost wholly absorbed by national banks until they resumed a place in the regular investment market as a result of the issuance of loans during the first World War The significance of some later series is doubtful because they represent a fluctuating average of long and short maturities, and, as will be seen later, maturity is an important factor affecting yield In Figure 5, the yields of high-grade long-term municipal, railroad, utility, and industrial bonds are shown Good municipal issues were for many years regarded as practically riskless The rapid growth of municipal debts during the 1920's, however, was responsible for many subsequent defaults The result has been a much more critical and discriminating attitude toward municipal bonds, even of our larger cities The number of municipalities in good standing in respect to their debt status was greatly diminished during the middle 1930's but has subsequently increased

In Figure 5 a continuance of the movement already noted in the chart on page 114 is in evidence The rise from 1900 to 1909 closely parallels that which occurred in the yield on British consols, although our curve for these corporation bonds starts from a slightly higher base Following a temporary drop in 1909 the advance continued until 1914, which year marks the beginning of World War I From then on, forces of an unusual nature were present, which caused rates to fluctuate over a much wider range than one would normally expect. The extraordinary advance in interest rates from 1916 on, to a point well above 5 per cent in 1920, can be accounted for largely by the extraordinary amounts of capital required for war purposes Thereafter a decline almost as rapid is noted until, at the end of 1927, yields on all classes of bonds were back to prewar levels The years 1928 and 1929, particularly the latter year, witnessed an increase in yields due to the competitive demand of the stock market The troubles of the early 1930's were followed by a decline of yields to unprecedented lows for this country These lows were not greatly exceeded even during the extraordinary financing of World War II (1941–1945) or the post-war inflation and boom The artificial controls and savings conditions that made possible this break with the precedent of usual war conditions will be discussed later in connection with the record of Federal obligations, which were the focal point of control

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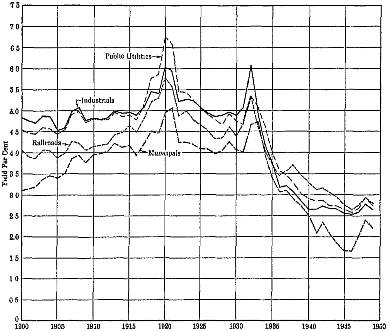
[4] See Chapter 18



*Data from Appendix (table of bond yields*

Figure 5 Yields on High Grade Municipal, Railroad, Industrial, and Public Utility Bonds in the United States, 1900–1949.

**The effect of risk on investment yields** For the purpose of analyzing the course of interest rates, we sought data relating to the yield of riskless securities, or, perhaps better, securities the market regarded as having the least investment risk In actual practice, however, the investor would have found, in any year during the period covered, a wide divergence in the return on different classes of investments Evidence of the spread that exists between different securities in the same market appears in Figure 5 Over the half-century shown there, municipals, as a class, sold on the lowest yield basis, the railroads, second lowest, until their more recent change of position with the formerly third-place utilities, while industrial bonds generally sold to net the investor the highest return until the end of the half-century In 1950, the yields for the very best utility and industrial bonds were very similar although the risk for industrial bonds as a class is generally regarded as greater The slightly lower yields for industrials than for utilities shown in this chart may well be the result of slightly shorter maturities among the cases selected to represent the former group rather an indication of differences in risk appraisal

The differences in yield among these four broad classes of investments measure, to some extent, the market's estimate of the relative degrees of investment risk involved in each class In other words, it is evident that investors, during most of the period studied, anticipated larger capital losses in industrial investments than in any other type, and, consequently, required a premium in the form of a higher interest return to compensate for this If the estimates of risk were accurate, the amounts by which the gross return received on any class of bonds, such as the industrials, would exceed the return on municipal bonds are amounts just sufficient to cover the greater capital losses suffered in the former class[5] However, investment risk cannot be measured exactly, nor can even such substantial approximation be made as is possible in the fields of life and property insurance In spite of this weakness, investors attach considerable importance to the probable risk as it is reflected in the yields of bonds whose price is set in a free and active market That informed opinion changes in its estimate of risk is apparent from Figure 5, which shows a marked decrease in the spread among the four yield series in the decade 1900–1910 Special difficulties of the utilities in 1918–1920 and of the railroads since 1930, even though the bonds were selected as "high-grade," alter the previous yield relationships and show how the risk estimates of the market are subjective judgments that can change not only with respect to individual securities, but even to whole classes of securities

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[5] It is a pertinent question whether the market estimate of risk measures exactly the mathematical risk involved in different groups of investments That is, given a large sum, would it be profitable for the investor to select securities on which the market places a high risk, and set up out of his gross return a fund to amortize losses? If the investor were able to select his issues with such success that his actual losses were less than his anticipated losses, he would then make a return in excess of a true interest return, that is, the premium for risk would more than measure the risk present For a further discussion of this subject, as well as a statistical analysis of certain trial investments, see Dewing, Arthur Stone, "Elements of Investment Income," *Harvard Business Review*, Vol I, No 3, p 300 ff Professor Dewing suggests the following notation in summarizing "If 'g' represents the gross return on any investment, 'p' the pure rate of interest then prevailing, 'r' the compensation for risk, and 'e' the profit or loss due to individual business judgment, then $g = p + r \pm e$"

**Tax status and yield** Municipal obligations have also had special attraction because their interest has been exempt from federal income taxes When the supply became limited and the value of tax exemption likely to be large for a long period because of the financial burdens of World War II, the difference between municipal and corporate yields widened Since 1940, some investors have found a lower nontaxable yield from municipal bonds as acceptable as a higher taxable yield from corporation bonds Fluctuations in the difference between the two levels of yields after 1940 reflect a varying appraisal of the value of that exemption This matter is discussed more fully in Chapters 20 and 24

**Legality and investment yields.** As a matter of fact there were other factors than those related to risk that may have caused a spread in the return of these four classes of investment during the period covered, nevertheless, one is correct in assuming that the order of desirability between the groups did not differ from that already indicated One of the most important of these outside factors pertains to the legality of various types of securities as proper investments for trust funds Each state has its own peculiar law defining the kinds of investments that trust funds, life insurance companies, and savings banks may purchase For many years practically every state has had legalized investments in a rather wide list of municipal and railroad bonds, but not until the 1920's did public utility bonds find similar favor Industrial issues were similarly slow in achieving legality[6] The comparative record of high-grade railroad, utility, and industrial bonds, as illustrated in Figure 5, tells something about the relative impairment of the position of the railroads and the enhanced investment prestige for the bonds that have been issued by utility and industrial companies

**Effect of marketability on yields** Not only are there differences in yield between groups of securities at any given time, but there are wide variations among the yields on individual securities within these groups, which may be accounted for only in part by the credit standing of the obligor named on the bond Consider for a moment the question of marketability It is a well-known fact that two bonds whose risk elements are exactly equal may vary in yield, where one is more readily marketable than the other

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[6] For the current situation as to "legal" investments in the various states, see the current issue of *Moody's Manual of Investments Governments*

Commercial banks prize this quality of marketability so highly that slight yield differences may be found among some of the bonds of the Federal Government because of this factor A larger issue that is more actively traded, and so will absorb selling more readily, will tend to sell at a shade lower yield than a smaller, less active issue

On the other hand, the growing importance of the life insurance company in the bond market has probably been an influence tending to shrink the importance of this marketability factor among credits eligible for their investment Life companies lay little emphasis on marketability Individuals, however, often prize the opportunity that marketability gives them to cut short their losses by resale in the case of speculative securities So among securities that are of less certain quality and not eligible for long-term institutional investment, rather higher yields would be expected for issues that have less marketability

**The maturity influence on yield.** The length of time a bond of good quality has to run to maturity will also affect its yield During periods of high rates on short-time paper, short-time bonds will sell at prices that make their yield approximately the same as that found on short-time commercial loans Long-term bonds, on the other hand, will sell on a somewhat lower yield basis because the investor seeks such issues for the purpose of extending this favorable return for as long a time as possible Conversely, when interest rates are especially low, long-term bonds sell at prices that yield somewhat more than short-term bonds At such periods, short-maturity bonds are in greater demand, for investors are reluctant to tie up funds for long periods at unfavorable interest rates This stimulates the demand for short-time issues and depresses the demand for long-term issues (This factor is discussed further in Chapter 25 )

**Geographical variation in interest rates.** Analogous in some respects to the variations in yield found among different securities in the same market are the variations found in the rates of interest current in different countries. If there were an absolutely free flow of capital from one country to another, and if political stability were the same throughout the world, the only differences in the interest yield on investments would be those arising from the special characteristics of the securities themselves, such as the degree of risk present, the maturity of the issue, its marketability, and the like As a matter of fact, there is not a free flow of capital from one country to another Trade barriers and nationalistic policies of self-sufficiency have interfered Moreover, the investment of funds abroad, irrespective of any other risks, involves exchange fluctuations There is also the difficulty of supervision, because of the remoteness of the enterprise, as well as the whole question of political stability in different countries, which makes for a natural reluctance on the part of investors to commit funds to distant parts of the world where events cannot be easily and conveniently followed For this reason, each financial market develops an interest rate of its own, within certain limits, depending on the local supply of, and the demand for, capital Each country has its own interest rate, which usually varies from that found in other markets

It is, of course, entirely logical that in normal peace times interest rates should be lower in old and established countries than in new and growing ones After capital accumulation has been going on for some time in a country, the domestic requirements become fairly well supplied, and the marginal productivity of capital is lowered—that is, capital must be employed in less and less profitable ways In new and undeveloped countries, on the other hand, the more productive uses of capital are still open and many opportunities are presented for high returns For this reason, capital flows from older to newer communities, from communities where the marginal productivity of capital is low to localities where it is high However, it is true that the risks of investment often are higher in new or undeveloped countries, because of a less stable government, inadequate legal systems, or the newness of industrial undertakings, the newness accounting for a higher return in the last class mentioned

For many years prior to 1914, Great Britain supplied capital in large quantities to countries all over the world The development of American railways before 1900 was materially helped by British capital, which was also invested on an extensive scale in South America, Canada, China, India, and other parts of the Far East The promise of higher rates abroad than at home and the presence of an ever-growing fund of capital were the main factors responsible for this movement

A study of the return on various groups of investments floated in the British markets from 1888 to 1911 will serve to illustrate the point just made in respect to the higher return customarily enjoyed on investment in less-developed countries

Thus, with but five exceptions, the average promised yield on new *domestic* securities floated in British markets was lower than that on securities issued by colonial enterprises, and, without exception, the average return on domestic flotations was substan-

### PROMISED RETURN ON HOME, COLONIAL, AND FOREIGN INVESTMENTS FLOATED IN BRITISH MARKETS 1888–1911*

| Year | Home Per Cent | Colonial Per Cent | Foreign Per Cent |
|---|---|---|---|
| 1888 | 4 35 | 3 43 | 5 61 |
| 1893 | 2 92 | 4 09 | 5 53 |
| 1898 | 2 81 | 3 07 | 3 97 |
| 1899 | 3 44 | 3 27 | 5 11 |
| 1900 | 3 35 | 3 20 | 4 05 |
| 1901 | 3 00 | 3 40 | 5 34 |
| 1902 | 3 12 | 3 21 | 4 94 |
| 1903 | 3 44 | 3 21 | 5 77 |
| 1904 | 3 46 | 3 78 | 5 83 |
| 1905 | 3 39 | 3 78 | 4 99 |
| 1906 | 3 37 | 3 85 | 5 14 |
| 1907 | 3 61 | 3 99 | 4 90 |
| 1908 | 4 00 | 4 04 | 4 95 |
| 1909 | 3 60 | 3 96 | 4 88 |
| 1910 | 3 72 | 4 19 | 4 85 |
| 1911 | 4 61† | 4 03 | 4 85 |

* See Lehfeldt, R A, "The Rate of Interest on British and Foreign Investments," *Journal of the Royal Statistical Society*, Vol 76, p 196 ff
† Three issues only

tially below that promised on foreign securities during the period covered Furthermore, the return on colonial enterprises was below that promised on foreign securities

After World War I a radical change took place in the position of the United States A vast accumulation of capital piled up in this country, which sought employment in foreign fields, partly in the rebuilding and financing of nations devastated during the war, and partly in financing less developed nations The same phenomenon became noticeable here that had previously existed in the British situation Interest rates were low at home, as contrasted with the promised return on investment in German, Japanese, Italian, and South American enterprises The failure of our domestic capital needs to grow as rapidly as capital accumulation and the promise of a substantially higher return on foreign investments led to a large expansion in the latter field

Because of the numerous defaults in the 1930's, and our losses on foreign investments, it is unlikely that private investment will be interested in this field for some time, save for a few exceptions, notably Canada Such loans as are made for reasons of national policy are likely to come from the Federal Government or agencies that have its support Business investments are typically made in foreign countries by subsidiaries of American corporations as branch activities of the latter rather than directly by the investor

In this field results have been more satisfactory than in that of foreign debt investment, as we shall see in Chapter 21

**Interest versus profits.** In economic theory the return on invested capital is called "interest," and up to this point in our discussion we have accepted this meaning of the term Theoretically, capital is entitled to a return that is devoid of all risks and that is in no way associated with the management of enterprises, for the return allocated to the *entrepreneur* or business manager is known in economic theory as "profits" We should have completely overlooked the practical aspects of the situation, however, had we concluded our discussion at this point We are, in fact, compelled to recognize the practical, as well as the theoretical, viewpoint of the investor Credit instruments, such as bonds and notes, it is true, do bear fixed rates of interest, and, in respect to the return on capital invested in this type of security, we are correct in confining our discussion to a study of current interest rates But this type of security represents only a small part of the invested capital of the country One must consider also the large amount of preferred stocks outstanding, the return on which, although not contractual, is frequently regarded as fixed in very much the same way that interest is In theory, the return on a preferred stock is partly interest and partly profit, since all stocks, both preferred and common, represent ownership in the corporation, yet the average investor probably regards dividends received on preferred stocks just as much a return on capital as he does the interest that he receives on bonds

Common stocks, on the other hand, present an even more complicated problem For not only is a part of the return received on this type of security more purely profit as contrasted with interest, but the forms in which the return may come are varied In fact, the return on common stock investments may be received in any or all of the following ways dividends, subscription rights, surplus accumulation, or appreciation in market value Theoretically, therefore, as well as practically, the return on such securities appears as a participation in profits, in that it is a residual, not a fixed, claim For the sake of clarity, the differences in the terminology of business practice, or accounting, and of economic theory must be kept in mind. In business practice, "interest" is the contractual rate paid to creditors, such as bondholders and mortgagees, and dividends are paid to stockholders, both common and preferred, out of the residual earnings, which are called the net profits In economic theory, the term "interest" refers to that imaginary fraction of the return to the supplier of capital, whether his legal position is that of creditor or owner, for the use of capital if such use entails no risk. Any surplus over this imaginary amount represents economic profits, which are in the nature of a premium for risk of capital loss. Presumably this premium demanded by the investor will be but a small part of the promised return in the case of well-protected bonds, somewhat more for second-grade bonds and preferred stocks, and relatively large for common stocks.

**Return on invested capital in selected groups of enterprises: industrial earnings, 1910–1913.** As one would expect, our task from now on will be somewhat more complicated than when we were discussing the pure rate of interest. At that point we were dealing with a definite phenomenon, which has long been studied and on which there is a mass of related and consistent data. In considering the return on various classes of stocks, or the total ownership equity in businesses, or on the total capital investment in enterprises where pure interest and a return for risk are both present in varying degree, one must be content with less satisfactory evidence.

We shall first analyze the return on broad classes of invested capital—that is, the return on total capital (borrowed plus owned) invested in certain selected types of industry. Thereafter we shall take up in more detail the return on selected classes of stocks, such as preferred and common.

In a study made by the authors of the rate of earnings on capital invested in industrial enterprises for the years 1910, 1911, 1912, and 1913, it was found that twenty-five companies averaged between 5.7 and 7.2 per cent on their total capital invested.[7] This was substantially lower than one would normally expect, in view of the risks inherent in industrial enterprises. We are, however, dealing with averages that include high- and low-earning concerns.[8] One of the characteristics found among industrial con-

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[7] The average return for specific years was as follows:

| *Year* | *Average Per Cent Earned by 25 Cos* |
|---|---|
| 1910 | 5.7 |
| 1911 | 5.7 |
| 1912 | 7.0 |
| 1913 | 7.2 |

[8] Another study for the years 1912 and 1913, which, unfortunately for our purpose, mixed industrial and utility data, showed earnings of $55,613,659, or a return of 13.67 per cent earned upon an invested capital of $406,829,348. The data, drawn from an accountant's file show that the concerns were probably more prosperous

cerns is a wide variation in the ratio of earnings to investment Some companies consistently earn very high rates The Ford Motor Company, for example, was able consistently to earn throughout this period well over 100 per cent on its book investment Other companies during the same time were unable to earn a rate equal to that promised on high-grade bonds It is the *expectation* of a high return, not the existence of a given *average* return, that attracts capital into industrial investment

**Earnings of miscellaneous companies, 1917.** The average rate of return shown for industrials in the preceding study covering the 1910–1913 period was somewhat lower than that shown for 31,045 selected corporations studied in another connection for the year 1917 One would expect the average return on capital invested in industrial enterprises to be high in 1917, however, on account of the large amount of war business handled during that year and the rapidity with which prices advanced in 1916 and 1917 The composite result for these 31,045 corporations, based on a report by the Treasury Department to the Senate, showed a total net income before taxes of $4,760,995,000 on an invested capital of $22,000,000,000, the per cent return here being 21 7[9] The average for all corporations, however, would undoubtedly be lower than this figure, for, according to Treasury reports, 119,000 corporations showed no net income at all in 1917 This latter figure is almost four times as large as the number of the corporations

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than average Of 158 reports, 117 showed earnings of eight per cent or more, in spite of poor business conditions See Sterrett, J E, "The Comparative Yield on Trade and Public Service Investment," *American Economic Review,* Vol VI, pp 1–8

[9] See Friday, David, *Profits, Wages and Prices* (New York Harcourt, Brace & Co, 1921), pp 35–37

| *Income Range Percentage* | *Net Income before Taxes (000 omitted)* | *Invested Capital (000 omitted)* | *Percentage Net Income before Taxes to Invested Capital* |
|---|---|---|---|
| Under 10 | $477,013 | $6,250,000 | 7 6 |
| 10–15 | 389,211 | 3,000,000 | 13 0 |
| 15–20 | 578,015 | 3,400,000 | 17 0 |
| 20–25 | 566,799 | 2,600,000 | 21 8 |
| 25–30 | 324,599 | 1,200,000 | 27 0 |
| 30–35 | 301,186 | 1,000 000 | 30 1 |
| 35–40 | 389,700 | 1,100,000 | 35 4 |
| 40–50 | 1,189,719 | 2,700,000 | 44 1 |
| 50–75 | 293,185 | 500,000 | 58 6 |
| 75–100 | 133,416 | 150,000 | 89 0 |
| Over 100 | 118,152 | 100,000 | 118 1 |
| Total | $4,760,995 | $22,000,000 | 21 7 |

that show an income, and this situation existed in spite of conditions which created unreal, inflationary profits

These figures are given for what they are worth, although it is hard to see how they can be used as a basis for broad generalizations As already indicated, they are based on operations during a war year and comprise only corporations that actually showed a profit[10] Furthermore, they comprise a heterogeneous group of companies in different lines of business

This last objection, however, has been overcome, to some extent, in that 30,892 of the companies listed have been grouped into 5 selected classes and the average rate earned by each class on capital invested shown separately The results of this study are shown in the following table

PERCENTAGE OF EARNINGS TO CAPITAL
OF 30,892 CORPORATIONS 1917

| *Percentage Net Income to Capital* | *Financial Corporations* | *Railroads and Public Utilities* | *Transportation by Water* | *Agricultural* | *Manufacturing and Mining* |
|---|---|---|---|---|---|
| Under 10 | 23 3% | 78 2% | 2 8% | 14 3% | 2 4% |
| 10-20 | 63 9 | 20 6 | 1 9 | 30 2 | 19 6 |
| 20-30 | 10 8 | 1 1 | 7 2 | 20 0 | 20 7 |
| Over 30 | 2 0 | 0 1 | 88 1 | 35 5 | 57 3 |

From these data for the year 1917 it appears that the lowest rate of return was found in the railroad and public utility group A partial explanation of this situation undoubtedly lies in the fact that both these industries are regulated as to the rates that they may charge and the conditions under which they may render service This situation applied not only to public utilities at this time, but also to railroads, particularly those doing an interstate business and coming under the control of the Interstate Commerce

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[10] The following table, taken from Mudgett, Bruce D , "The Course of Profit During the War," *Annals of the American Academy of Political and Social Science*, May, 1920, pp 148 ff , will serve to illustrate the extent to which industrial profits advanced during the war period

RATE EARNED BY SELECTED INDUSTRIALS ON INVESTED
CAPITAL DURING PREWAR AND WAR PERIODS

| | *U S Steel* | *Sloss Sheff Steel* | *Lackawanna Steel* | *Crucible Steel* | *Bethlehem Steel* | *Rep Iron and Steel* | *Ry Steel Spring* | *Press Steel Car* | *Am Loc* | *N Y Air Brake* | *West Air Brake* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Prewar Period (1910-1913) | 6 8 | 3 0 | 4 3 | 5 6 | 7 1 | 4 3 | 4 6 | 4 4 | 5 7 | 5 4 | 17 3 |
| Total War Period | 12 2 | 6 5 | 14 9 | 15 7 | 32 5 | 12 8 | 8 6 | 6 0 | 8 8 | 23 4 | 24 4 |
| U S Neutral Period | 11 3 | 4 8 | 10 2 | 14 9 | 41 7 | 10 7 | 5 8 | 4 9 | 8 9 | 31 3 | 21 2 |
| U S Belligerent Period | 13 5 | 9 1 | 22 0 | 18 1 | 18 7 | 16 0 | 12 9 | 8 6 | 8 5 | 11 5 | 34 1 |

Commission A study of railroad rates from 1910 to 1920 will show that they failed to advance anywhere nearly so fast as prices With rapidly increasing operating expenses, therefore, one would expect a decreasing return in this industry during this period In public utility enterprises, an 8 per cent rate was often allowed on the fair value of property used for public service, although the rates allowed today are much lower than this Even where a conscientious effort is made to allow rates that will yield the public service corporation a fair return, such corporations are at a distinct disadvantage during periods of rising prices There is an inevitable delay in the legal processes that must be experienced in order to obtain sanction for new rates, and this prevents the utility from advancing its rates as fast as the prices of materials and labor increase Particularly during a period of advancing prices, therefore, would one expect the rate of profit of such corporations to be lower than that found in many industrials

**Recent tendencies in industrial earnings.** In normal times one might also argue that the rate of return on capital invested in railroad and public utility enterprises should be lower than that found among industrials, on account of the low risk in the former type of enterprise as compared with the latter To a certain extent this is true Some industrial concerns earn on an average very high rates on their invested capital

A very comprehensive study of industrial profits is the result of an analysis of corporation Federal income tax returns by Professor Nerlove [11] Unlike some compilations, his results include unprofitable as well as profitable corporations The rates of return shown in the table are based upon net profits after interest but *before Federal income taxes,* and invested capital is taken as the book net worth, which includes preferred stock, common stock, and surplus or deficit Because the amount of borrowed capital through bond issues is not of major importance for industrial corporations, it seems probable that the return on total invested capital would give a set of figures very similar to those shown on the next page.

In view of the known risks in the mining field, the return shown in the table suggests that the field has more allurement than profits for the capitalist On the other hand, a substantial part of book investment in this field may be represented by the mines, exclusive of development and equipment, at arbitrary valuations set by the corporate promoters However such values are arrived at, they represent a capitalization of hopes rather than tangible outlay in

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[11] Nerlove, S H, *A Decade of Corporate Incomes, 1920 to 1929* (Chicago University of Chicago Press, 1932), pp 40, 42

RATE EARNED BEFORE INCOME TAX ON OWNED CAPITAL OF INDUSTRIAL CORPORATIONS 1920–1929

(By Per Cents)

| Year | *All Industrials* | *Mining and Quarrying* | *Manu-facturing* | *Con-struction* | *Tra* |
|---|---|---|---|---|---|
| 1920 | 7.0 | 8.1 | 9.5 | 10.5 | 7.3 |
| 1921 | 1.1 | −4.4 | −0.2 | 2.3 | −0.6 |
| 1922 | 6.0 | 0.3 | 7.5 | 5.9 | 8.6 |
| 1923 | 7.5 | −0.6 | 9.9 | 11.7 | 11.0 |
| 1924 | 6.4 | −0.9 | 7.5 | 11.3 | 9.1 |
| 1925 | 8.3 | 4.1 | 9.6 | 13.2 | 10.3 |
| 1926 | 7.9 | 4.6 | 9.2 | 12.8 | 8.7 |
| 1927 | 6.8 | 0.7 | 7.6 | 12.4 | 8.0 |
| 1928 | 7.9 | 2.3 | 9.2 | 11.2 | 9.1 |
| 1929 | 7.7 | 4.1 | 9.7 | 10.9 | 6.7 |
| Averages | 6.6 | 1.8 | 8.0 | 10.2 | 7.8 |

productive goods requiring society's savings, and consequently, the rate of return has a somewhat different meaning for this special type of business.

Among the other three groups—trade, manufacturing, and construction—the risks and uncertainty would appear to be in the same order as the rates of return. During the years immediately following 1929, profits were reduced least for the trade group and most for construction, at least in the case of major corporations.

The combined figures for leading corporations as compiled by the National City Bank of New York on the rate of return earned on the book amount of ownership capital is valuable in reflecting conditions for the kind of corporation in which investors are most frequently interested. The percentages earned for the years 1929-1949 are given in the accompanying table. They reflect the deep depression of the early 1930's, the recovery of the later 1930's, which was marred by the short depression of 1938, the war years of the early 1940's, and finally, the postwar boom of the late 1940's. To give a clearer impression of the level of return for the different industrial groups, the table shows the average return for three periods: (1) the depressed 1930's, (2) the war years 1940–1945, and the four postwar years 1946–1949. Even though the United States did not enter the war until December of 1941, the influence of the European conflict was reflected in business activity as early as 1940. The postwar years should be recognized as being influenced by inflation and the heavy demand for durable goods by both industry and the consumer.

In reading such figures as to the rate of return, the fact that they are calculated on the book value of the ownership interest (preferred and common stock plus surplus) should be kept in mind.

RATE OF RETURN EARNED ON OWNED CAPITAL OF INDUSTRIAL CORPORATIONS 1929–1949*

(By Per Cents)

| Year | *Mining and Quarrying* | *Manufacturing* | *Construction* | *Trade* |
|---|---|---|---|---|
| 1929 | 11.8 | 12.6 | 9.7 | 13.9 |
| 1930 | 3.3 | 6.8 | 4.5 | 7.6 |
| 1931 | 0.8 | 2.4 | 5.4 | 5.3 |
| 1932 | — | — | 1.2 | 1.5 |
| 1933 | 1.1 | 2.6 | — | 7.8 |
| 1934 | 3.2 | 4.1 | — | 10.3 |
| 1935 | 4.8 | 6.6 | — | 10.6 |
| 1936 | 7.2 | 10.5 | 2.7 | 12.5 |
| 1937 | 8.7 | 10.8 | 2.7 | 10.9 |
| 1938 | 4.2 | 4.6 | 7.3 | 8.6 |
| 1939 | 4.8 | 8.3 | 10.3 | 11.2 |
| 1940 | 6.3 | 10.5 | 8.4 | 10.4 |
| 1941 | 6.8 | 12.3 | 12.7 | 11.0 |
| 1942 | 7.4 | 9.9 | 15.4 | 9.9 |
| 1943 | 7.2 | 9.6 | 9.6 | 10.1 |
| 1944 | 8.0 | 9.6 | 5.0 | 10.4 |
| 1945 | 7.1 | 9.3 | 6.3 | 10.9 |
| 1946 | 9.4 | 12.1 | 12.1 | 21.9 |
| 1947 | 16.0 | 17.1 | 15.6 | 18.4 |
| 1948 | 20.5 | 18.2 | 16.9 | 18.2 |
| 1949 | 13.5 | 13.8 | 14.7 | 13.2 |
| Averages | | | | |
| 1930–39 | 3.8 | 5.7 | 3.4 | 8.6 |
| 1940–45 | 7.1 | 10.2 | 9.6 | 10.4 |
| 1946–49 | 14.8 | 15.3 | 14.8 | 17.9 |

* Compiled from National City Bank of New York, *Monthly Letter on Economic Conditions* (April issues)

The economist would point out that book value of supporting assets carried at cost would tend to overstate the current replacement value of the ownership interest after deflation such as occurred in the early 1930's and understate it after inflation had taken place as in 1946–1949. Consequently, the reported rate of return would be higher than the return shown if it were calculated on replacement value in deflation years and lower than shown for inflation years.[12]

These figures are more useful from the investor point of view than those in the earlier table for the years 1920–1929 because they show the actual return realized after income taxes. The earlier table overstates the return realized by the amount of corporate income taxes paid.

In contrast, the figures for the rate of return earned on *net*

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[12] The inflation element can also be detected by comparing profits to sales instead of book investment. See *Cleveland Trust Company Business Bulletin*, June 15, 1948 for chart of data 1929–1947 and discussion of this point.

RATE OF RETURN EARNED ON OWNED CAPITAL OF TRANSPORTATION, PUBLIC UTILITIES, AND FINANCIAL CORPORATIONS 1929–1949*

| *Year* | *Transportation* | *Public Utilities* | *Finance* |
|---|---|---|---|
| 1929 | 6.1 | 11.1 | 12.0 |
| 1930 | 4.0 | 9.4 | 2.0 |
| 1931 | 1.0 | 7.6 | — |
| 1932 | — | 5.8 | — |
| 1933 | — | 4.7 | 6.6 |
| 1934 | — | 4.6 | 8.2 |
| 1935 | — | 5.2 | 11.0 |
| 1936 | 1.2 | 6.2 | 12.6 |
| 1937 | 0.7 | 6.6 | 8.6 |
| 1938 | — | 5.8 | 7.0 |
| 1939 | 0.8 | 6.9 | 7.8 |
| 1940 | 1.8 | 7.1 | 8.5 |
| 1941 | 4.6 | 6.8 | 7.2 |
| 1942 | 8.2 | 6.2 | 6.9 |
| 1943 | 7.7 | 6.6 | 8.0 |
| 1944 | 5.8 | 6.6 | 7.7 |
| 1945 | 3.9 | 6.7 | 7.6 |
| 1946 | 2.5 | 8.2 | 6.4 |
| 1947 | 3.9 | 8.0 | 6.7 |
| 1948 | 5.2 | 8.6 | 8.1 |
| 1949 | 3.3 | 8.7 | 9.4 |
| Averages | | | |
| 1930–39 | 0.8 | 6.3 | 6.4 |
| 1940–45 | 5.3 | 6.7 | 7.6 |
| 1946–49 | 3.7 | 8.4 | 7.6 |

* Source as for preceding table

*worth* by transportation and public utility corporations would be considerably different from the rates earned on *total investment*. During much of the 1930's, the railroads earned a lower rate on total investment than they paid on the debt, so that interest absorbed an amount equal to or greater than total earnings, leaving no return for the stockholders as a group. The public utilities, on the other hand, were generally successful in earning a higher rate on their total investment than the rate paid on borrowed funds, so that the net worth return was enhanced by "trading on equity." Further data on these matters will be studied in the later chapters dealing with these two important fields of business.

The data for the concerns in the finance field are heavily influenced by banking data where common stock is usually the only security employed. For this group, as for some of the others, the averages shown are an overstatement for periods including deficit years. The deficit rates were not calculated and are treated as years of zero return. (These figures can be compared with the more inclusive figures for all national banks given in Chapter 15.) Even this fails to cover the whole matter for the banks, because in those years in which a bank failed because of heavy losses it was typically dropped from the tabulation, so that data on return tends to be overstated for that reason also

In studying these tables of return earned on book net worth, the reader will concentrate on noting the comparative stability of the several fields over the business cycle and differences in the level of return The utilities showed the most stable earnings and the railroads the most fluctuating with the industrials and banks occupying an intermediate position As for average return, the railroads have had the most difficult time and the industrials have earned the most The possibility of high return is an important factor *in making the retention of earnings an attractive policy*

**The return on stocks** There remains one more aspect of the problem to be considered It will be recalled that we started our analysis of the return on invested capital by considering interest rates Thereafter we considered the return on total invested capital in certain enterprises An important difference between the two approaches is that the former represented yields that were calculated on market prices of bonds and the latter on the amount of book investment of the various kinds of business The former figures give an idea of the rate of return that the investor could obtain from commitments made at market prices from time to time as well as the cost of borrowing for corporations acquiring funds in those years We return to this form of measurement to determine what rate of return investors could have obtained over the years if they purchased stocks at the market price Figures will first be studied for preferred stocks and then for common stocks

**Yield on preferred stocks** Although differing in legal position from that of the bondholder, the preferred stockholder in practice occupies a position very similar to that of the bondholder The return that he receives is, it is true, a participation in profits and not an assured or promised return Yet his return, except in the case of special classes of preferred stock, is limited to the rate of dividend specified in the stock contract The return is a stipulated one both for preferred stocks and for bonds It is true that the former must wait upon earnings and the willingness of the board of directors to declare a payment, whereas the latter must be paid as a matter of contract in order to avoid insolvency High-grade preferreds, however, have a similar type of investment appeal and so tend to show a rate of return that parallels that of bonds and responds to similar market influences

We may, therefore, conclude our discussion of preferred stocks with the following observations

1 If a preferred stock could be found that was absolutely devoid of risk, it would tend to sell to yield the same return to the investor at any given time as a long-term, high-grade bond The characteristics that would differentiate two such issues otherwise statistically alike would be.

> (a) *Fixed versus contingent charge* The fact that bond interest is a fixed obligation, the failure to pay which will cause receivership, means that it is more certain of payment in difficult times A preferred dividend may be passed either because of the absence of surplus from the balance sheet or because of a desire to conserve working capital Neither of these reasons would be sufficient to prevent the payment of interest In good times, these two factors appear unimportant, but when the outlook for a corporation is uncertain, they are likely to make for a marked difference in the estimate of investment risk as it is reflected in market price
>
> (b) *Maturity* Preferred stock has no maturity date, a fact that might permit somewhat greater price fluctuations The difference is probably minor, at least in the case of long-term bonds
>
> (c) *Tax status* Formerly dividends were not subject to the Federal normal income tax, so that preferred stock had a slight advantage over a similar bond This is no longer the case Sometimes the status of preferred stocks and bonds differs with respect to state and local taxation
>
> (d) *Legality for fiduciary investment* The fact that preferred stocks are not so generally permissible as are bonds for life insurance companies, commercial and savings banks, and trustees would be another influence

2 In practice, however, preferred stocks generally have somewhat higher investment risk than bonds, and hence sell at yields somewhat in excess of those shown for bonds Usually, high-grade preferred stocks sell to yield from ½ to 1 per cent above the yield of high-grade bonds in the same type of industry, and this spread is maintained as one descends to lower types of bonds and stocks The table below compares the yields on average market prices of high-grade industrial bonds and preferred stocks[18] The diminished spread between the two series up to the 1930's is sig-

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[18] For a limited sample of railroad preferred stock yields, compared with bond yields by rating groups, see Guthmann, Harry G, "Railroad Security Yields to Investors 1924, 1926, and 1928," *Journal of Land and Public Utility Economics*, August, 1931, pp 256–259

nificant of a changed public attitude which shows increased favor toward preferred stocks The preferred yields failed, however, to maintain the remarkably low differential when, after the early 1930's bond yields began a march to unprecedented low levels Since the relative quality of the two series may not have remained constant, care should be exercised in interpreting the spread

YIELDS ON MARKET PRICES OF HIGH GRADE INDUSTRIAL BONDS AND PREFERRED STOCKS*

| | *Preferred* | | | *Preferred* | | | *Preferred* | |
|---|---|---|---|---|---|---|---|---|
| *Year* | *Stocks* | *Bonds* | *Year* | *Stocks* | *Bonds* | *Year* | *Stocks* | *Bonds* |
| 1910 | 6 30 | 4 83 | 1929 | 5 12 | 5 04 | 1940 | 4 14 | 2 57 |
| 1915 | 6 48 | 4 97 | 1930 | 4 95 | 4 87 | 1941 | 4 08 | 2 50 |
| 1920 | 6 79 | 6 01 | 1931 | 5 04 | 4 79 | 1942 | 4 31 | 2 54 |
| 1921 | 6 80 | 5 96 | 1932 | 6 13 | 5 58 | 1943 | 4 06 | 2 55 |
| 1922 | 6 14 | 5 21 | 1933 | 5 75 | 4 98 | 1944 | 3 99 | 2 58 |
| 1923 | 6 12 | 5 26 | 1934 | 5 29 | 4 28 | 1945 | 3 70 | 2 50 |
| 1924 | 6 08 | 5 21 | 1935 | 4 63 | 3 73 | 1946 | 3 53 | 2 44 |
| 1925 | 5 90 | 5 06 | 1936 | 4 33 | 3 34 | 1947 | 3 79 | 2 52 |
| 1926 | 5 78 | 4 91 | 1937 | 4 45 | 3 16 | 1948 | 4 15 | 2 70 |
| 1927 | 5 51 | 4 83 | 1938 | 4 34 | 2 82 | | | |
| 1928 | 5 12 | 4 88 | 1939 | 4 17 | 2 64 | | | |

* *Security Price Index Record*, Standard and Poor's Corp

**Return on common stock investments** The common stockholder is the real owner of the enterprise, and his return, theoretically as well as practically, includes a larger element of economic profit, or risk premium, than that of other classes of security holders In considering the return on common stocks, one might proceed by comparing earnings to the par value, or to the book value, of the stock, yet such a comparison would be of little practical use The real interest of the investor centers on a comparison of the market price of the stock with the "earnings available" therefor It should be noted that earnings and not dividends are here considered, for the reason that all earnings of the corporation, whether reinvested in the business or paid out as dividends, actually belong to the common stockholder Where they are reinvested in the business instead of being paid out as dividends, the value of the equity behind the stock should be increased by the amount of such retained earnings Ultimately the common stock holder should get, if the reinvested earnings are employed successfully, a return in the form of a larger current dividend rate, of appreciation in the value of his holdings, or of both

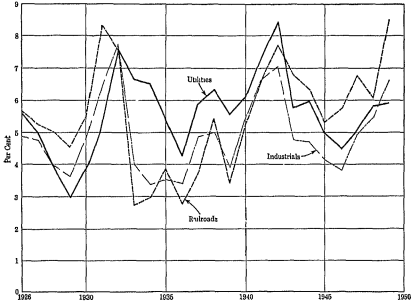
A comparison of the market price of common stocks with earnings available will indicate, therefore, the real return that the investor receives Such a study goes somewhat further than did our previous discussion of the rate at which the total capital invested in various enterprises is able to earn, for in that discussion we confined ourselves to a comparison of earnings with the book value of the investment The market value of the investment in an enterprise may, at any time, and generally does, vary from the book value of the investment The mere fact that the railroad industry earned but 5 per cent on invested capital in 1925 does not mean necessarily that the purchaser of common stock in a typical railroad company would have paid book value for such an investment and been content to receive a 5 per cent return As a matter of fact, a study of market prices of stocks will prove conclusively that the investor often expects and demands a return on his investment in excess of the rate that the book value of his investment is able to earn In other words, the market value of stocks is often below book value At other times, market price may exceed book value Market, rather than book, value is emphasized because it represents the amount that the investor must pay at a given time to acquire the investment

Many investors may be more interested in dividends than in earnings This interest may stem from the need for immediate cash income or from skepticism of the potential benefits to be had from reinvested earnings The relative weight accorded to earnings and dividends in so far as they differ will vary with the stock and the investor Because of this possible emphasis upon the cash dividend return, the relationship of dividends to market price, or dividend yield, will also be studied

Important differences exist between the earnings and dividends to market price ratios for common stocks on the one hand and bond and preferred stock yields on the other. The latter income is a fixed return so long as the security continues to pay and so the yield return, once the security is purchased, is established for the life of the investment for that investor Earnings and dividends of common stocks are subject to constant change, however, so that a measurement of their relation to market price at any given time does not necessarily represent the investor's expectations for the future Consequently the market price and the per cent return on that price will be greatly affected by those expectations The following figures should be read with this point in mind

Because of changing expectations, as well as the fluctuating character of earnings, dividends, and prices, the rates of earnings return and dividend yield will be expected to vary greatly from time to time

Figure 6 shows the dividend yields to be had from groups of selected common stocks in three fields, industrials, utilities, and railroads, for the period 1926–1949[14] Yields on average market prices fell in the boom of 1929 as stock prices mounted and then declined as prices fell more rapidly than dividends through 1932 The low yields after 1932 for industrials and railroads are partly a reflection of the methods of compilation The continued inclusion of stocks in the average, which had reduced their dividend greatly or omitted it entirely helped to reduce the rate of return on average price One result is that during the 1930's the utilities often show higher yields than the rails or industrials, although they are generally regarded as having less investment risk In any given year, yields may also reflect an expectation of higher or lower dividends which the investor expects to be higher than the low current dividend that is used in the calculation of yield



*By permission of Standard & Poor's Corporation*

**Figure 6 Dividend Yields on Market Price of Common Stocks 1926–1949**

Fears over the outlook boosted stock yields again in 1941 and 1942 during the early part of the war Subsequently they declined somewhat, although they remained at a relatively high level during the 1940's

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[14] Dow-Jones has similar series for industrials, railroads, and utilities (1928 on), Barron's has a 50 stock average, chiefly industrials but including a few rails and utilities (1919 on), and Moody's has series for industrials, railroads, utilities, banks and insurance (1929 on)

Similar data showing the rate of current earnings, instead of dividends, relative to the market price are given in the following table The figures are not strictly comparable with those for dividend yields because they include a different selection of stocks[15] The wide fluctuation of earnings return on market price for the railroad stocks show what large annual variations can sometimes result from extreme earnings fluctuations When no earnings exist, the stock price can only be justified by the expectation of future earnings, when the rate of earnings return rises to a high level as shown during the war by railroads, it indicates a market belief that the situation is temporary

**Conclusion.** In this chapter an array of factual material has been presented for the purpose of showing two things (1) what the investor has been able to obtain in the way of promised return from time to time in the past on the basis of rate of return on the going market price, and (2) what various kinds of business have been able to earn on their book investment The first included yields

DIVIDEND YIELDS ON MARKET PRICE OF COMMON STOCKS 1926–1949

(Per Cents)

| *Year* | *Industrials* | *Railroads* | *Public Utilities* |
|---|---|---|---|
| 1926 | 4 86 | 5 61 | 5 57 |
| 1927 | 4 73 | 5 25 | 4 98 |
| 1928 | 3 93 | 4 98 | 3 88 |
| 1929 | 3 61 | 4 52 | 2 95 |
| 1930 | 4 84 | 5 48 | 3 84 |
| 1931 | 6 40 | 8 35 | 5 12 |
| 1932 | 7 74 | 7 54 | 7 59 |
| 1933 | 4 06 | 2 70 | 6 66 |
| 1934 | 3 37 | 2 94 | 6 52 |
| 1935 | 3 52 | 3 90 | 5 30 |
| 1936 | 3 39 | 2 75 | 4 26 |
| 1937 | 4 83 | 3 68 | 5 85 |
| 1938 | 4 96 | 5 41 | 6 32 |
| 1939 | 3 87 | 3 40 | 5 55 |
| 1940 | 5 51 | 5 27 | 6 08 |
| 1941 | 6 62 | 6 64 | 7 36 |
| 1942 | 7 04 | 7 74 | 8 46 |
| 1943 | 4 76 | 6 82 | 5 76 |
| 1944 | 4 69 | 6 32 | 5 95 |
| 1945 | 4 13 | 5 30 | 4 89 |
| 1946 | 3 81 | 5 71 | 4 46 |
| 1947 | 4 90 | 6 76 | 5 03 |
| 1948 | 5 47 | 6 05 | 5 83 |
| 1949 | 6 63 | 8 56 | 5 93 |

Source *Security Price Index Record,* Standard and Poor's Corp

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[15] *Moody's Manual of Investments, Industrials* reports the three groups tabulated here and also series for banks and insurance companies Current figures are reported in *Moody's Stock Survey*

RATE OF CURRENT EARNINGS ON MARKET PRICE OF COMMON STOCKS 1929–1949

(Per Cents)

| *Year* | *Industrials* | *Railroads* | *Public Utilities* |
|---|---|---|---|
| 1929 | 6.14 | 8.54 | 4.51 |
| 1930 | 4.53 | 6.36 | 4.48 |
| 1931 | 2.83 | 2.86 | 5.58 |
| 1932 | –0.13 | –5.19 | 6.26 |
| 1933 | 2.78 | –0.49 | 4.66 |
| 1934 | 3.78 | –0.48 | 4.83 |
| 1935 | 5.45 | –0.08 | 5.60 |
| 1936 | 5.87 | 4.50 | 5.29 |
| 1937 | 6.80 | 2.19 | 6.20 |
| 1938 | 4.39 | –6.54 | 5.92 |
| 1939 | 6.36 | 4.31 | 6.34 |
| 1940 | 8.15 | 9.82 | 6.77 |
| 1941 | 10.28 | 25.11 | 7.44 |
| 1942 | 9.18 | 52.31 | 8.41 |
| 1943 | 7.02 | 34.41 | 6.92 |
| 1944 | 7.47 | 22.30 | 6.36 |
| 1945 | 6.19 | 10.92 | 5.57 |
| 1946 | 7.08 | 5.88 | 5.82 |
| 1947 | 11.54 | 13.52 | 5.75 |
| 1948 | 14.80 | 18.08 | 7.16 |
| 1949 | 14.08 | 12.85 | 7.97* |

* Adjusted to make comparable with earlier years.

Source: *Moody's, Manual of Investments, Industrials,* 1949, p. a20, *Moody's Stock Survey,* June 5, 1950, p. 429.

on bonds and preferred stocks and the current dividend yields on common stocks, as well as the going rate of earnings on the market price of common stocks in the leading fields of corporate enterprise. While the reader will not attempt to memorize such a mass of statistics, he should find it possible to carry away some ideas as to the cyclical behavior of return in the various fields and the customary differences between the various forms and fields of investment.

For a refinement of analysis, the material must often be studied at its source to discover the items selected and the method of calculation in order to understand its behavior. Comparison of series prepared by different statistical organizations is often illuminating. Differences in yields are usually minor as between series that reflect high-grade bond yields. Common stock performance is much more variable, so different security selections may result in different figures by different sources, as may also the matter of different methods of statistical construction of the series.

Our intention has been to give a panoramic view in this chapter. In later chapters, similar data may be found where they may amplify this treatment, permit a further exploration of the analysis, or illustrate further aspects of our study.

# 6

# The Return on Investment—Continued

While the yield material in the preceding chapter is reasonably useful and satisfactory in conveying an idea of the investor's rate of return in the case of bonds, it is much less satisfactory with respect to common stocks Bonds may, it is true, default, and the promised rate of return at the time of purchase will then be reduced accordingly but the mortality is relatively moderate In a severe depression abuses or unusual technological changes may bring out weaknesses in particular fields Thus, in the depression of the 1930's, real estate bonds revealed defective financial standards and railroad bonds reflected the changed economic status of an industry In the case of common stocks, however, the income after purchase is expected to vary from the return current at the time of purchase Consequently, the investor should be curious to learn how they have performed over a period of time Two types of study have been made, one hypothetical and the other of actual investor experience The first is represented by studies of selected groups of stocks over varying periods of time, the latter, by the portfolio performance of such investors as the fire insurance companies Some of the more important studies will be examined in this chapter

Because doubts are often expressed as to the quality and performance of preferred stocks, they also have been subjected to this type of study In some instances their record has been compared with that of common stocks

The experience of the 1920's was such that preferred stocks were expected to show somewhat higher dividend return than common stocks (Comparative material will be given later in this chapter ). This was regarded as reasonable because of the common practice of using a part of the common earnings to build up equity Consequently common stocks could hope for appreciation as a result of this growth factor over the long run, while preferred stocks were expected to show no price trend as a class Preferred stocks might, of course, move in response to a trend in basic interest rates much as the level of bond prices would They might also move individually as their credit standing rose or fell

Since the 1920's, the better quality of preferreds have risen in popular regard, they have even been adopted as suitable investments for some institutional purchasers, as when they became "legals" under certain conditions for life insurance companies in the important state of New York Consequently, high-grade preferred yields have drifted downward somewhat since the early 1930's, although not to the extent of high-grade bond yields In contrast, common stock yields have shown no clear-cut trend

Another difference between preferred and common is that dividend income is much steadier for the former because of its fixed claim and its priority, although the weak showing of many preferred issues in the depression years following 1929 has led to some skepticism as to the importance of this generalization. Thus a study of 498 companies with both kinds of stock, which passed the dividend on their common stock in 1931 and 1932, showed 53 9 per cent, or 268 companies, which were obliged to omit the preferred dividend in the same period[1] In 246 of the 268 cases, the omission of the preferred dividend took place within one year of the omission of the common dividend A further study of common stocks, however, would probably have shown that, of those companies that continued to pay, very few were able to avoid reducing their payment on the common stock in the period 1929–1933, while their preferred would have paid in full so long as any common dividend was paid

If the yield concept is broadened to include appreciation as well as dividend income, the yield return in relation to market price would be expected to average somewhat lower but to show somewhat less fluctuation for preferred than for common stocks Since the return on preferred stocks is fixed, the price movements would not be expected to show any particular long-term trend as in the case of common stocks, which tend to rise as a result of the reinvestment of earnings factor Even a bond price series might show a slight upward drift as the bonds approached maturity, if it were made up of bonds selling at a discount Preferred stocks have no maturity influence Major price movements of preferred stocks are chiefly the result of changing business conditions that affect corporate earnings In this respect preferred stock prices follow the movements of common stocks more closely than those of high-grade bonds, which are primarily influenced by interest rates[2] Individual preferred stocks of high quality will, however, follow the bond market

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[1] Horsfield, Mona M, "Is Preferred Stock Preferable?" *Barron's*, November 28, 1932, p 5 For further discussion of the merits and weaknesses of this form of security see Lawrence, Herbert, "How Sound Are Preferred Stocks?" *Barron's*, November 27, 1939, p 18

Whether or not the purchaser of preferred stocks will gain appreciation or suffer depreciation will be determined largely by the market conditions at the times of purchase and sale As far as preferred stocks are concerned such gain or loss is more ordinarily associated with the problem of "recovery of principal" than of "income" In this respect the investor's principal, when it is in preferred stock, stands a greater average chance of either loss or gain than when in bonds, and a lesser chance than when in common stocks

But the investor should not fall back on these easy generalizations when he is faced with specific investment alternatives A particular preferred stock may well be of a quality superior to that of many bonds This individual character is more significant in making selections than any average that is based chiefly on cases of a different quality The failure to recognize the special qualities of the particular issue would be as improper as for a fire insurance company to measure the risk on individual buildings on the basis of the general loss average without regard to the type of building, occupancy, or neighborhood Some leading factors that would differentiate investment risks among the preferred stocks would be (1) the capital structures, (2) the type of business, and (3) the extent to which the stock was "seasoned" by time Illustrations will be found in the table on pages 142–143, which records the performance of the preferred and common stocks of some leading companies that were paying dividends on both in 1929 The period is of particular interest because it covers the years of unusual business decline in the early 1930's In the table, it may be noted that while 30 per cent of preferred stocks were paying nothing in 1934, 45 per cent of the common issues were also in that position, and while 12 of the 33 preferred issues were still paying the full rate in 1934, only 2 of the common stocks had that distinction

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[2] Sloan, Laurence H, *Security Speculation* (New York. Harper & Bros, 1926), pp 184–188 See Chapters 7 and 8 for statistical material on market and income characteristics of preferred stocks

Obviously, a common stock might offer a steadier income and even a more stable market price than a preferred stock of a company similar in every way except in capital structure, if the common were preceded by no prior issues and the preferred by a substantial bond issue In a similar manner, the common stock of a food or a public utility company might show a more stable dividend record than the preferred stock of a steel or machinery company And finally, if preferred stock purchases were confined to new, and so "unseasoned," issues, the final investment results would be almost certainly unfavorable, for the following reasons first, because of the greater difficulty in predicting the outlook for such issues and so in making judicious selections, as compared with issues that have a history, and secondly, because new issues are almost always sold at or near par, which means that, with the conventional call price present, which limits appreciation, the possibility of loss is very likely to be greater than that of gain—a situation not true for old issues bought in the open market[8]

**Common stock and normal growth** Before going on to the actual record of common stock performance, reference might be

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[8] Thus Dewing reports a study by S F Nicholson, covering 607 industrial preferred stocks issued between Jan 1, 1915 and Jan 1, 1923 The average price at the time of issue was 99, while the average price at the end of the period, Jan 1, 1923, was 70½, after full allowance had been made for issues called at a premium The median time of issue was late in 1918, and the average dividend rate promised a little over 7 per cent It is pointed out that the total dividends were thus slightly greater than the average loss of principal The factor of compound interest on dividends is not mentioned The period was one unfavorable to weak industrial issues See Dewing, Arthur S, "The Rule of Economic Profits in the Return on Investments" *Harvard Business Review,* Vol 1, p 462 A larger study of 1,477 issues, brought out in the period 1880–1920, with results carried through 1922, is described briefly by the same author in *Financial Policy of Corporations* (New York Ronald Press Co, rev ed, 1926), pp 1199–1202

In marked contrast are the results of all industrial preferred stocks listed on the New York Stock Exchange, the rate of return being computed for each year on the basis of market price at the beginning of the year The period 1920–1930 was favorable to common stocks and junior issues generally The dividend yield alone and the total rate of return (dividends plus appreciation) are shown by years

DIVIDEND YIELD AND TOTAL RETURN ON INDUSTRIAL PREFERRED STOCKS LISTED ON N Y STOCK EXCHANGE*

(By Per Cents)

| | *1920* | *1921* | *1922* | *1923* | *1924* | *1925* | *1926* | *1927* | *1928* | *1929* | *1930* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Dividend Yield | 7 4 | 7 1 | 6 2 | 6 2 | 6 1 | 6 1 | 6 2 | 5 6 | 4 9 | 5 2 | 5 3 |
| Total Return | 7 1 | 0 8 | 14 6 | 7 4 | 6 4 | 11 7 | 8 8 | 11 0 | 8 6 | 2 8 | 5 8 |

* From Bickel, R H, *The Investment Performance of Industrial Preferred Stocks from 1920 to 1930,* an unpublished master's thesis, Northwestern University, 1931

## COMPARATIVE DIVIDEND RECORD OF PREFERRED AND COMMON STOCKS OF SOME LEADING COMPANIES

(Dividends per Share 1929–1934)

| NAME OF COMPANY | PREFERRED | | | | | | COMMON | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Industrials* | *1929* | *1930* | *1931* | *1932* | *1933* | *1934* | *1929* | *1930* | *1931* | *1932* | *1933* | *1934* |
| Allied Chemical & Dye Corp | 7 | 7 | 7 | 7 | 7 | 7 | 6 | 6[a] | 6[a] | 6 | 6 | 6 |
| American Can Co | 7 | 7 | 7 | 7 | 7 | 7 | 5 | 5 | 5 | 4 | 4 | 4 |
| American Car & Foundry Co | 7 | 7 | 7 | 5.25 | — | — | 6 | 6 | 2.75 | — | — | — |
| American Locomotive Co | 7 | 7 | 7 | 5.25 | — | — | 8 | 4.50 | 1 | — | — | — |
| American Sugar Refining Co. | 7 | 7 | 7 | 7 | 7 | 7 | 2.50 | 5 | 5 | 3.25 | 2 | 2 |
| American Tobacco Co | 6 | 6 | 6 | 6 | 6 | 6 | 5[b] | 6.25[b] | 6 | 6 | 5 | 5 |
| Baldwin Locomotive Works | 7 | 7 | 3.50 | — | — | — | 1.75 | 1.75 | 0.87 | — | — | — |
| Bethlehem Steel Corp | 7 | 7 | 7 | 5.25 | — | 1.75 | 3.50 | 6 | 4.50 | 0.50 | — | — |
| J I Case Co | 7 | 7 | 7 | 7 | 4.75 | 4 | 6 | 6 | 4.50 | — | — | — |
| Colgate-Palmolive-Peet Co | 6 | 6 | 6 | 6 | 6 | 6 | 2 | 2.50 | 2.50 | 1.75 | 0.25 | 0.50 |
| Corn Products Refining Co | 7 | 7 | 7 | 7 | 7 | 7 | 4 | 4.25 | 4 | 3 | 3[c] | 3 |
| Deere and Co | 1.40[b] | 1.40 | 1.40 | 0.65 | 0.20 | 0.30 | 1.20[b] | 1.20[d] | 0.90[d] | — | — | — |
| E I DuPont de Nemours & Co, Inc | 6 | 6 | 6 | 6 | 6 | 6 | 5.85[b] | 4.70 | 4 | 2.75 | 2.75 | 3.10 |
| Firestone Tire & Rubber Co | [e] | 6 | 6 | 6 | 6 | 6 | 1.60[b] | 1.45 | 1 | 1 | 0.55 | 0.40 |
| General Motors Corp | [f] | [f] | 5 | 5 | 5 | 5 | 4.30[b] | 3.30 | 3 | 1.25 | 1.25 | 1.50 |
| B F Goodrich Co | 7 | 7 | 5.25 | — | — | — | 4 | 2 | — | — | — | — |
| Goodyear Tire and Rubber Co | 7 | 7 | 7 | 7 | 3.25 | 5.50 | 2.50 | 5 | 3.50 | 0.25 | — | — |
| International Harvester Co, Ltd | 7 | 7 | 7 | 7 | 7 | 7 | 2.50 | 2.50 | 2.50 | 1.82 | 0.75 | 0.60 |
| International Nickel Co of Canada, Ltd | 7 | 7 | 7 | 7 | 7 | 7 | 0.90 | 1 | 0.45 | — | — | 0.50 |
| National Biscuit Co | 7 | 7 | 7 | 7 | 7 | 7 | 3[b] | 3.20[b] | 2.80 | 2.80 | 2.80 | 2.40 |
| Shell Union Oil Corp | [e] | 5.50 | 4.12 | — | — | — | 1.40 | 0.70 | — | — | — | — |
| United States Steel Corp | 7 | 7 | 7 | 7 | 2 | 2 | 8 | 7 | 5.50 | 0.50 | — | — |

| NAME OF COMPANY | PREFERRED 1929 | 1930 | 1931 | 1932 | 1933 | 1934 | COMMON 1929 | 1930 | 1931 | 1932 | 1933 | 1934 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Railroads* | | | | | | | | | | | | |
| Atchison, Topeka, & Santa Fe | 5 | 5 | 5 | 5 | 4 | 5 80 | 10 | 10 | 10 | 2.50 | — | 2 |
| Baltimore & Ohio | 4 | 4 | 4 | 1 | — | — | 6 25 | 7 | 5 25 | — | — | — |
| Kansas City Southern | 4 | 4 | 4 | 3 | 1 | — | 3 75 | 5 | 3 | — | — | — |
| New York, Chicago, & St Louis | 6 | 6 | 4 50 | — | — | — | 6 | 6 | 4 50 | — | — | — |
| New York, New Haven & Hartford | 7 | 7 | 7 | 3 50 | — | — | 4 25 | 6 | 5 50 | — | — | — |
| Norfolk & Western | 4 | 4 | 4 | 4 | 4 | 4 | 12 | 12 | 12 | 9 | 8 | 10 |
| Southern Railway | 5 | 5 | 5 | — | — | — | 8 | 8 | 6 | — | — | — |
| Union Pacific | 4 | 4 | 4 | 4 | 4 | 4 | 10 | 10 | 10 | 8 | 6 | 6 |
| *Utilities* | | | | | | | | | | | | |
| Brooklyn-Manhattan Transit Corp | 6 | 6 | 6 | 6 | 6 | 6 | 4 | 4 | 4 | 2 | — | 0 75 |
| Consolidated Gas Co of N Y | 5 | 5 | 5 | 5 | 5 | 5 | 3 25 | 4 | 4 | 4 | 3 45 | 2 25 |
| Pacific Telephone and Telegraph Co | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 | 7 | 6 | 6 |

*a* Also 5 per cent stock dividend
*b* Adjusted for stock split-up
*c* Also 1 per cent stock dividend

*d* Also 6 per cent stock dividend, 1930, 1½ per cent, 1931
*e* Issued 1929
*f* Issued 1930

made again to the growth factor, which accrues quite independently of fluctuating prices We refer to the gradual increase in population and to the consequent long-time growth in the earning power of any well-managed business than can thereby enjoy an expanding market A corporation that finances extensions largely out of current earnings may continue year by year to increase the earning power, as well as the asset value, behind its common stock, simply because its markets expand as population increases As this growth takes place, the company is in a position from time to time to pay dividends in stock that represent recognition of those surplus earnings that are reinvested from year to year in the business instead of being paid out as cash dividends

An illustration of this process is given in the picture of growth of the Monsanto Chemical Company in Figure 7 below The student of American industrial expansion will find a great many similar companies As population growth slackens, however, it becomes more and more necessary to search carefully in order to locate industries and companies that continue to have growth possibilities permitting a profitable retention of earnings The investor should realize that reinvested earnings do not produce additional earnings automatically They may fail to appear and total earnings may even decline The record must be interpreted and prospects evaluated with the greatest care

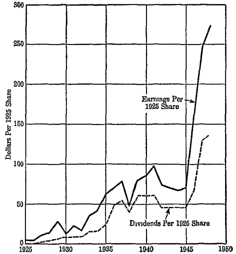

**Figure 7** A Record of Common Stock Growth, 1925–1948

Two dangers beset the investor The first is that he may pay so high a price for such stocks as to counterbalance the profit potentialities Companies such as the company just cited, du Pont (chemicals), and International Business Machines (manufacture and rental of statistical machines) have come to be so popular as to sell generally at prices that discount considerable earnings growth The second danger is that signs of senility may be overlooked An industry may reach the stage where its markets are no longer increasing It may either have reached the saturation point or it may be losing position to substitutes

The operation of this method of accumulation by investment in common stocks with growth possibilities is indicated more fully in the illustrative material given later in this chapter Annual earnings of such issues will fluctuate from year to year, reaching abnormally high levels during good years and sinking to low levels during years of depression, but over a period of years the retention of earnings should reflect itself in growing investment and earning power for the common shares Because of the concealing effect of stock subscription rights and stock dividends, as they are ordinarily employed, upon the figures in which this growth is reflected, they will be analyzed at this point before our discussion of the investment performance of common stocks is concluded

**Effects of rights on market value of common stocks.** The extent to which the market value of a corporation's stock equity advances as corporate earnings advance is not always reflected accurately by the current quotations for its stocks on the exchanges The reason for this situation is that corporations frequently give stockholders rights to subscribe to new stock at less than the current market quotation, or else declare stock dividends, either in terms of their own shares or through the shares of subsidiary companies We shall trace briefly the effects of such operations on the market value of the individual shares of a corporation's stock, with the idea of showing that the current quotations for the corporate stock cannot always be used to determine changes that take place in the value of the concern's total stock equity

Let us consider, first, a corporation that frequently issues rights to its stockholders to subscribe to new capital stock The common shares of corporation *A*, we shall assume, sold at 150 on January 1, 1944 On January 2, 1944, stockholders were allowed to subscribe to one new share for each two old shares held, at $100 a share[4] The holder of 100 shares, then worth $15,000, thus had the right to acquire 50 more shares by increasing his investment by $5,000 His total investment, immediately after this operation, would have had a value of $20,000[5] Let us now assume that, by January 1, 1947, the stock of this company was selling at $140 a share and that further rights had been declared, permitting the stockholders to subscribe at part to one new share for each three shares held Our investor, having 150 shares of stock, again acquires 50 new shares by investing $5,000 If we were to compute the value of his holdings immediately after this operation, we should find that it would equal the value of his holdings on January 1 (140 x 150, or $21,000) plus $5,000, or $26,000 in all Suppose now that on January 1, 1951, the stock is quoted at 145 The question is Has the investor made a capital gain during the period, even though the "per share" market quotation for his stock was less in 1951 than on January 1, 1944? This we can answer by going back to 1944 and noting the facts as they actually occurred On January 1, 1944, our stockholder had an investment with a market value of $15,000 Since that time he added $10,000 in cash and, on January 1, 1951, he had 200 shares of stock worth 145 a share, or $29,000 in all Thus, although the stock was quoted at 150 on January 1, 1944, and at 145 on January 1, 1951, the investor, had he availed himself of his rights to subscribe, would have enjoyed a capital gain of $4,000[6]

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[4] The rights so accorded are known as subscription rights The rights attaching to each share of stock, which in the present case give the stockholder the right to subscribe to one-half share of stock, are known as New York rights The right to subscribe to one new share of stock, in the present case consisting of two New York rights, is known as a Philadelphia right

Now let us consider the position of an investor had he sold his rights instead of exercising them by subscribing to new stock The first question is What would these rights be worth? This we may find out by referring again to our figures The holder of 100 shares on January 2, 1944, had the right to subscribe to one share of new stock for every two shares of old stock held This privilege must have had a value, since the subscription price was less than the market value of the stock Had the original owner of the rights not wished to subscribe, he could have sold his rights to someone who did However, the value of rights is not so great as one might at first infer Immediately after a stock goes "ex-rights," its value declines (A stock is "ex-rights" after the date set by the corporation for determining the list of stockholders of record to whom the rights are to be issued) Let us again refer to our example On January 1, 1944, two shares of stock represented an equity in the corporation worth $300 On January 2 the corporation receives $100 in cash for each new share of stock issued, which amount increases the value of the equity behind two old shares to $400, at the same time, however, this operation results in increasing by 50 per cent the number of shares outstanding. There are now three new shares for two old ones. The stock accordingly declines in market value to

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[5] This will be explained more fully in a later part of this chapter For the time being it is sufficient to point out that on January 1 his holdings had a market value of $15,000 The holder, by subscribing to new stock, adds $5,000 to his investment Regardless of what takes place subsequently, the value of his 150 shares will be $20,000 immediately after the subscription was consummated

[6] Computed by taking his January 1, 1944, holdings at $15,000, adding thereto a subsequent cash investment of $10,000, and subtracting from $29,000

$$\frac{\$400}{3} = \$133.33 \text{ per share}$$

The rights attaching to one share of stock, therefore, will be worth

$$\frac{\$33.33}{2} = \$16.66$$

That is, for each two shares of old stock, the holder, by adding $100, may acquire a share a stock about to have a value of $133.33. One half of the premium represents the value of the rights attaching to a single share. The value of this privilege may be computed by the following formula, where $X$ is the required value, $P$ the difference between the market and the subscription prices, and $R$ the percentage rate of increase

$$X = \frac{P \times R}{1 + R}$$

To revert to our figures, the holder of 100 shares who, on January 2, sold his rights instead of exercising them received $1,666 in cash. On January 2, 1947, the total value of his rights, similarly computed, was $1,000. The total sum realized by the sale of rights therefore amounted to $2,666.66. On the other hand, there is a loss of $500, because our second investor's stock was quoted at only $145 a share at the end of the period, contrasted with a quotation of $150 at the beginning of the period. The total net gain in this case is therefore $2,166.

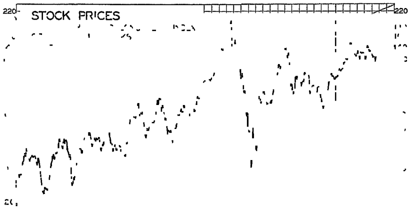
It is important for us to understand why the gain is less in the second case than in the first. The essential reason is that when a stockholder sells his rights instead of exercising them he really disposes of a part of his investment in the enterprise. In the present case, after the first rights had been exercised, the stock fell in value from $150 to $133.33 a share, an amount represented by the value of the rights attaching to each share. Consequently, the man who sold his rights invited a new holder to acquire new stock by adding to the corporation's assets only $100 for each share acquired, as contrasted with a previous value for this equity of $150. The value of the total assets, or net worth, of the corporation is thus increased at a slower rate than is the number of shares of common stock outstanding. The holder who fails to exercise his rights therefore suffers a loss in his proportionate ownership in the corporation's assets, the amount of the loss being measured by the value of his rights In each instance the stock recovered some of the losses incurred when it sold "ex-rights" The first man, by increasing his holdings in both instances, carried more stock than the second, and therefore made a profit on a greater number of shares as the result of the price advances in the stock

**Effect of stock dividends on current quotations.** A second type of operation that destroys the validity of current stock quotations as a measure of the real increase in the market value of corporate equities is the declaration of stock dividends Let us assume that corporation *A*, of whose common stock our investor holds 100 shares, declares a stock dividend of 100 per cent payable January 2, 1944, to the stockholders listed on the books of the corporation on January 1, 1944 On January 1 the stock is quoted at 150 On January 2 the stock sells "ex dividend" at $75 per share, for two shares are now outstanding in place of one old share, although no change has taken place in either the assets or the earning power By January 1, 1947, however, the stock advances to 100 On January 2, 1947, another stock dividend of 50 per cent is paid, and on January 1, 1951, the stock sells at $90 a share What is the market value of the equity represented by one original share of stock? On January 2, 1944, our investor got one share of new stock for each old share held, giving him at that time a total of 200 shares On January 2, 1947, he received 100 more shares, giving him 300 shares in all The value of his holdings was $15,000 on January 1, 1944, and $27,000 on January 1, 1951 Thus, although the stock was quoted at 60 points less in 1951 than on January 1, 1944, there had been an increase of 80 per cent in the value of this man's original holdings, and he was not required to advance any more cash Much the same process takes place when the stock of subsidiary companies is used to pay a dividend Unlike a stock dividend, such a distribution diminishes the amount of assets of the corporation, but like the stock dividend, it leaves unchanged the total value of what the stockholder owns. He merely owns directly what he previously owned indirectly through his corporation

Formerly, certain market averages failed to show in true fashion the increase that takes place in the market values of stock equities because they ignored stock dividends just as they still ignore cash dividends Later, averages were expected to be adjusted so they show any growth and allow for the influence of stock dividends and splitups

Figure 8 is constructed on this principle and shows the way in which ownership equities in corporations increase over a period of years. This chart shows Standard and Poor's Long-Term Index of

Industrial Common Stocks for the half-century 1900–1949 on a logarithmic scale chart This scale enables the reader to compare the *rate* of growth in the later years when the price index was high with the growth in early years when the index was low (The straight trend line drawn to contain the course of the index shows a rise, or growth, of approximately 3¾ per cent a year) The fluctuations were sufficiently regular for the years 1900 through 1926 to be fairly contained by two trend lines running through the tops and bottoms The more extreme fluctuations occurring subsequently might raise a question of the presence or continuance of a secular trend beyond that point However, the broad pattern of growth is clear



*By permission of Standard and Poor's Corporation*

**Figure 8 An Index of Common Stock Prices Showing Long Term Upward Trend (Logarithmic Scale) *Source* Annual Forecast, for 1950, November 1949**

The stock market boom of 1929 ranged above the pathway outlined in the chart, just as the crash culminating in 1932 ranged outside in the downward direction The two movements appear as counterbalancing forces so far as the trend is concerned However, the price decline during World War II in 1942 represented another downward variation Not since 1937 have common stocks as measured by this index reached a level relatively as high with respect to the indicated trend represented by the uppermost containing line Postwar inflation plus substantial additions to equity by many leading corporations during the late 1940's make that eventuality a reasonable possibility

The reader should regard this chart as a broad illustration of an historical growth record rather than a certain indication of a trend that can be projected into the future Such chief factors as the price level, population and industrial growth, and the political and tax treatment accorded our industrial corporations will all need to be watched. The chart has the further value of providing a thumbnail picture of the cyclical movements of common stocks over this half-century period, which may be useful in judging the influence of the time setting for some of the studies to which we now turn.

**Common stocks versus bonds.** Several interesting studies have been made in recent years with the idea of determining the relative investment merits of common stocks. One of the very first important statistical studies was published in 1925 under the title *Common Stocks as Long Term Investments*.[7] The risks of bond investment and the advantages of common stocks when the commodity price level is rising were clearly indicated. A number of hypothetical tests were made, covering various periods, to determine the relative income and appreciation which would have been derived from the investment of $10,000 in high-grade bonds and a similar sum in common stocks. The results of these tests are summarized in the following table.[8]

| *Test No.* | *Period* | *Total Advantage of Stocks over Bonds** |
|---|---|---|
| 1 | 1901–1922 22 years | $16,400.94 |
| 2 | 1901–1922 22 years | 9,242.26 |
| 3 | 1901–1922 22 years | 21,954.72 |
| 4 | 1880–1899 20 years | 12,002.04 |
| 5 | 1866–1885 20 years | 2,966.85 |
| 6 | 1866–1885 20 years | –1,012.00 |
| 7 | 1892–1911 20 years | 11,723.80 |
| 8 | 1906–1922 17 years | 6,651.01 |
| 8a | 1906–1922 17 years | 1,938.08 |
| 9 | 1901–1922 22 years† | 13,734.72 |
| 10 | 1901–1922 22 years† | 3,329.72 |
| 11 | 1901–1922 22 years† | 17,140.25 |

* Based on an investment of approximately $10,000 in ten diversified common stocks of large companies and an equal amount of high-grade bonds.
† Railroad stocks.

The stocks used in these tests were selected on an arbitrary or mechanical basis in order to avoid the danger of being influenced by hindsight. In nearly all cases the stocks used were the ten most active stocks at the beginning of the period studied. No effort was made to select "sound" stocks. Probably a greater profit might be expected had this been done, although this possibility is made to appear somewhat doubtful by the results of a comparative study, cited below, in which the actual investment record of a group of fire insurance companies in common stocks showed smaller profits than accrued from a theoretical commitment in the stock market leaders included in the Dow-Jones averages  Varying periods were likewise used in an effort to cover intervals of falling as well as of rising prices and to use years unfavorable as well as favorable for beginning and ending the two investment programs  In every case except one, it will be observed that the results are more favorable to the purchaser of stocks than to the purchaser of bonds  However, the limitations of the study are indicated by the fact that although twelve cases are given, they represent only five different initial years (1866, 1880, 1892, 1901, and 1906) and four different final years (1885, 1899, 1911, and 1922)  An important criticism is that only three of the cases (Nos 4, 5, and 6) fall within a period marked by declining commodity prices—that is, between the years 1865 to 1896  Of the three cases that do fall within such a period, one case is favorable to bonds (No 6), another shows one of the lesser differences (No 5), and only the third (No 4) shows a distinctly favorable balance for common stocks  Furthermore, although in Test No 4 the common stocks were stated to be those of five industrial and five railroad corporations, the five industrials were more nearly of the utility type (Adams Express, American Express, Wells Fargo Express, Pullman Palace Car, and Western Union Telegraph), which tends to fare better than industrials in a period of declining commodity prices, because operating expenses tend to adjust to the decline more rapidly than their somewhat inflexible rate structures

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[7] Smith, Edgar L., *Common Stock as Long Term Investments* (New York: The Macmillan Co., 1925).

[8] *Ibid.*, p. 20.

The analyses of Rose are of greater interest because (1) they included actual investment records as well as hypothetical cases, (2) the results were presented as annual rates of return at compound interest, and (3) the results were also shown on an annual basis so that they could be studied with any desired beginning and ending years, thus eliminating the influence of arbitrarily selected beginning and ending dates[9]  The experience of the twenty-five largest fire insurance companies was examined for the twenty-two years 1905 to 1926, inclusive  These companies were used because they are permitted to invest in both stocks and bonds and published regular reports The period was one highly favorable to common stocks as compared with bonds The rate of return was computed for each year as the amount of cash income (interest or dividends) plus any market appreciation or minus any depreciation in relation to the market value of the given investments at the beginning of the year On this basis, the average annual return earned during the period by these companies from bonds was 4 73 per cent as against 7 24 per cent from all stocks Unfortunately the data did not permit separate computations for preferred and common stocks, but the former averaged only about one fourth of all stocks held over the period studied[10] The higher return from stocks was chiefly the result of appreciation, rather than higher dividend yield, and came mostly from the common stocks The company that showed the highest average return, 6 37 per cent, held a large proportion of stocks, 61 2 per cent of total assets, while the company with the lowest return earned but 3 92 per cent and had a high proportion of bonds The corresponding averages (arithmetic means) for the 27-year period ending five years later in 1931 were 4 95 and 3 02 per cent, respectively (Had the latter percentages been computed by the correct geometric mean, as suggested in footnote 14, they would have been 4 55 and 3 22 per cent, respectively) The asset proportions of these two companies are shown in the following table[11]

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[9] Rose, Dwight C, Vol I, *A Scientific Approach to Investment Management* (1928), and Vol II, *The Practical Application of Investment Management* (1933) (New York Harper & Bros) Certain figures are continued to 1938 by Rose in "Relation of Investment Policy to Result of the Twenty-five Largest U S Fire Insurance Companies," *Investment Counsel Annual,* 1939, pp 124–143  This further comparison is still favorable to stocks, but the importance of the period selected for study may be seen in Chart III, page 127  Average return from bonds 1908 to 1938—4 43%, from stocks—6 05%

PERCENTAGE STATEMENT OF ASSET DISTRIBUTION 1926

| | *Company with Highest Return* | *Company with Lowest Return* |
|---|---|---|
| Bonds | 25 1% | 73 0% |
| Common Stocks | 38 8 | 11 2 |
| Preferred Stocks | 22 4 | 1 1 |
| Total Bonds and Stocks | 86 3 | 85 3 |
| Mortgages and Collateral Loans | 9 | 2 7 |
| Bank Deposits | 8 4 | 7 0 |
| Real Estate | 4 4 | 5 0 |
| Total Assets | 100 0% | 100 0% |

The performance of the common-stock market leaders that constituted the Dow-Jones industrial and railroad stock averages during this period was much more spectacular The average annual return for each group and the amount arising from appreciation alone are shown in the following table[12]

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[10] *Ibid*, Vol II, pp 41, 44

[11] *Ibid*, Vol I, p 112

[12] *Ibid*, Vol I, pp 139, 147

ANNUAL AVERAGE RETURN AND APPRECIATION FROM INDUSTRIAL AND RAILROAD COMMON STOCKS INCLUDED IN DOW-JONES SERIES*

| | Railroads | | Industrials | |
|---|---|---|---|---|
| *Period* | *Total Return* | *Appreciation* | *Total Return* | *Appreciation* |
| Jan 1, 1901 to Jan 1, 1910 | 8 86% | 5 14% | 11 90% | 4 48% |
| Jan 1, 1910 to July 1, 1921 | − 62 | −5 32 | | |
| July 1, 1921 to Jan 1, 1928 | 19 44 | 14 60 | 23 90 | 18 62 |
| Total Period 1901–1928 | 7 24 | 2 76 | 13 20 | 7 80 |

* Occasionally includes preferred stock, usually speculative

The same series, when carried to January 1, 1933, showed substantially lower percentages The average rate of return, including both cash income and appreciation or depreciation for the 32-year period 1901 to 1932 inclusive, was but 1 36 per cent for the railroad stocks and 7 84 per cent for industrial stocks The appreciation factor alone would have equalled a negative return of −3 52 per cent for the railroad stocks and a positive return of 2 40 per cent for industrials[13]

One of the most careful comparative studies of preferred and common stocks is that of Jackson, covering corporations with both types of issues quoted on the leading stock exchanges of the country for the years 1887 to 1925[14] The results as a whole were

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[13] *Ibid*, Vol II, pp 230, 244 The percentages were not given as in the previous volume and so were computed from the data, the geometric mean suitable for semiannual compound interest being used, as it was by Rose in the table shown above, for the years 1901–1928 The 32-year accumulation from an initial $100, the return compounded semiannually, amounted to $145 79 for rail stocks, and $1,172 69 for industrial stocks The "appreciation" factor alone would have reduced an initial $100 to $32 12, giving a net loss in the case of rail stocks, and would have increased it to $214 64 for industrial stocks

[14] Jackson, James Roy, "Common and Preferred Stocks as Investments," *Journal of Business*, July and October, 1928, Vol I, pp 294–323, 397–416 A statement on methodology is given, valuable to the student because some writers have even employed faulty mathematics that bias the results in favor of common stocks Two frequent errors of this type are (1) the failure to allow for compounding of interest in measuring the influence of appreciation, and (2) the use of the arithmetic mean in averaging rates of return for a period of years For example, the first error would treat 100 per cent appreciation over a ten year period as amounting to 10 0 per cent per annum, when actually such appreciation equals 7 0 per cent interest, compounded semiannually An example of the second error may be shown by taking the arithmetic mean of an appreciation of 100 per cent in one year followed by a 50 per cent depreciation, which would give an "average" of 25 per cent gain per year Actually, the two changes represent a zero gain, a result that is obtained from the geometric mean of the relatives (one plus the percentage of return or gain) The formula for the average return per period thus computed would be

$$\sqrt[n]{(1+i_1)(1+i_2)\quad(1+i_n)}-1$$

in which $i$ is the annual or semiannual rate of return and $n$ the number of interest periods Since appreciation and extreme price fluctuation are more characteristic of common stocks than either preferred stocks or bonds, both of the errors mentioned tend to make for a superior showing of the common stocks favorable to common stocks as compared with preferred stocks when the return is regarded as the sum of dividends and appreciation. The results are stated by years in the table on page 155, both in annual and in summary form for the whole period.[14a]

The table shows that, although the common stock return averaged higher in all three groups, it was higher in only 19 out of the 39 years for railroad issues and in but 19 out of 37 years for industrial issues Jackson concludes [15]

> In general, the investor who could afford to diversify earned a larger return by buying common stock, but we must remember that our results, in large measure, are drawn from a period of rising prices The investor who could not diversify, but who bought common stock, did better or worse, depending for the most part upon his good fortune or good judgment in picking the right companies, not primarily because he picked common stock in preference to preferred stock

Such data as he found available pointed to this conclusion Thus the few railroad stocks available in the period 1886 to 1896, the latter year marking the end of a period of declining commodity prices, showed an average annual return of but 0 9 per cent for the common issues as against 6 6 per cent for the preferred issues The industrial common issues from 1891 to 1896 showed a negative average annual rate, –0 4 per cent, as against 4 5 per cent for the preferred issues [16] These results appear at variance with those of Rose, which during a later period showed that industrial common stocks enjoyed a return in greater excess over normal interest rates than would seem to be explainable solely from the changes in the commodity price level [17] However, a considerable number of leading industrial corporations have bonds and preferred stock outstanding, and the appreciation of property and inflation of profits accruing from the investment of these claimants to a fixed amount would logically lead to profits for the common stock in excess of what might be expected from a measurement of the rise in commodity prices In turn, common stocks in corporations that use borrowed or preferred stock funds would be likely to suffer more than is usual in a period of deflation

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[14a] *Ibid*, pp 312, 313, 314 The rates of return in the summary are computed from the tables on pp 400, 402, 404

[15] *Ibid*, p 416

[16] *Ibid* Computed from tables on pp 400, 402

[17] Rose, Dwight C., Vol. I, *A Scientific Approach to Investment Management* (1928), p 138, and Vol II, *The Practical Application of Investment Management* (1933), p 62 (New York Harper & Bros)

## ANNUAL RATES OF RETURN (CASH INCOME AND APPRECIATION) ON LISTED PREFERRED AND COMMON STOCKS

(Return Measured for Twelve Months Ending May 1 of Given Year)

| | Railroads | | Industrials | | Public Utilities | |
|---|---|---|---|---|---|---|
| *Year* | *Common* | *Preferred* | *Common* | *Preferred* | *Common* | *Preferred* |
| 1887 | 66.5 | 39.8 | −3.9 | 53.6 | — | — |
| 1888 | −21.5 | −11.3 | 60.1 | 12.7 | — | — |
| 1889 | 3.2 | 35.0 | −36.6 | 6.7 | — | — |
| 1890 | 18.9 | 17.6 | — | — | — | — |
| 1891 | −7.1 | −4.1 | — | — | — | — |
| 1892 | 17.7 | 14.3 | 22.2 | 23.2 | 37.7 | 18.8 |
| 1893 | −16.0 | −8.6 | 10.4 | 4.1 | — | — |
| 1894 | −21.2 | −15.0 | −14.9 | −11.5 | — | — |
| 1895 | 5.3 | 6.0 | 1.3 | 9.1 | — | — |
| 1896 | −10.6 | 4.5 | −15.6 | 0.8 | — | — |
| 1897 | 9.6 | −6.7 | −18.3 | −4.4 | — | — |
| 1898 | 42.7 | 33.9 | 33.3 | 17.1 | — | — |
| 1899 | 60.5 | 55.3 | 134.5 | 72.2 | 29.2 | 22.9 |
| 1900 | 17.0 | 7.8 | −24.4 | −5.3 | 79.2 | 39.4 |
| 1901 | 108.7 | 46.8 | 23.3 | 9.6 | 22.5 | 12.1 |
| 1902 | 37.2 | 17.6 | 15.3 | 13.0 | 24.8 | 12.6 |
| 1903 | −9.3 | −6.9 | −6.5 | −1.5 | −45.7 | −23.4 |
| 1904 | −24.5 | −13.7 | −29.3 | −8.9 | −19.4 | −4.8 |
| 1905 | 46.5 | 29.0 | 86.6 | 41.3 | 85.4 | 27.7 |
| 1906 | 13.9 | 7.2 | 31.3 | 9.3 | 14.1 | 1.8 |
| 1907 | −18.7 | −12.2 | −10.8 | −4.4 | −12.0 | −7.8 |
| 1908 | −16.6 | −14.6 | −18.2 | −7.8 | −25.7 | −13.6 |
| 1909 | 74.2 | 48.1 | 54.4 | 31.3 | 54.2 | 35.3 |
| 1910 | −6.8 | −2.3 | 3.5 | 1.8 | 3.2 | 0.7 |
| 1911 | −2.1 | 1.3 | 0.1 | 6.5 | 1.6 | 0.3 |
| 1912 | 3.2 | 5.4 | 16.9 | 6.2 | 6.1 | 7.7 |
| 1913 | −17.6 | −13.7 | −10.6 | −2.6 | −14.3 | −5.1 |
| 1914 | −16.3 | −14.9 | 4.3 | 4.1 | −10.2 | −2.7 |
| 1915 | 2.9 | −5.9 | 11.5 | −3.4 | 7.9 | −1.7 |
| 1916 | 16.9 | 5.5 | 76.4 | 40.7 | 4.5 | −1.4 |
| 1917 | 4.7 | −1.7 | 13.3 | 0.1 | −5.8 | −7.6 |
| 1918 | −33.9 | −18.5 | −6.4 | −5.4 | −12.6 | −16.1 |
| 1919 | 28.5 | 13.4 | 50.5 | 26.6 | −7.8 | −9.8 |
| 1920 | −6.2 | −7.6 | 17.4 | 1.4 | −14.7 | −20.2 |
| 1921 | 1.6 | −1.6 | −14.2 | −3.7 | 12.6 | 7.3 |
| 1922 | 48.8 | 41.4 | 21.3 | 15.5 | 35.1 | 23.8 |
| 1923 | −9.9 | −3.1 | 4.1 | 4.4 | 49.1 | 15.5 |
| 1924 | 13.3 | 15.3 | −12.4 | −3.0 | −1.7 | 0.5 |
| 1925 | 69.6 | 34.7 | 42.1 | 26.0 | 52.2 | 21.5 |

### SUMMARY OF TOTAL RESULTS FOR WHOLE PERIOD

| | | | | | | |
|---|---|---|---|---|---|---|
| Accumulation from $100 in Initial Year | $2,115.00 | $1,106.00 | $2,759.00 | $1,238.00 | $700.80 | $224.90 |
| Equivalent Average Rate of Return per Annum (semiannual compounding) | 7.8% | 6.3% | 10.0% | 7.6% | 7.3% | 3.0% |

Rodkey has also prepared a valuable and interesting study comparing common and preferred stocks of leading corporations whose securities were listed and most active on the New York Stock Exchange during the period 1908 to 1932[18] Two of the tables are reproduced below the first comparing the market price performance and cash income of the bonds and preferred and common

### MARKET VALUES AND CASH INCOMES OF BONDS AND COMMON AND PREFERRED STOCKS OF TEN INDUSTRIAL CORPORATIONS WITH FUNDED DEBT

(Market Values as of January 2 of Given Year)

| | Market Value | | | Dividends | | Interest on |
|---|---|---|---|---|---|---|
| *Year* | *Common* | *Preferred* | *Bonds* | *Common* | *Preferred* | *Bonds* |
| 1908 | $10,000 00 | $10,000 00 | $10,000 00 | $ 446 22 | $ 548 04 | $ 614 15 |
| 1909 | 20,420 75 | 14,797 89 | 11,437 71 | 429 57 | 618 71 | 613 14 |
| 1910 | 26,839 51 | 16,788 29 | 11,739 86 | 375 24 | 671 55 | 608 10 |
| 1911 | 18,598 27 | 14,077 88 | 11,490 09 | 272 94 | 671 55 | 568 73 |
| 1912 | 14,860 28 | 12,445 82 | 11,095 21 | 189 61 | 708 59 | 568 32 |
| 1913 | 15,168 33 | 12,884 33 | 11,146 85 | 266 18 | 1,502 06 | 581 32 |
| 1914 | 11,298 73 | 11,440 17 | 10,659 95 | 287 18 | 757 71 | 559 91 |
| 1915 | 10,915 51 | 10,762 33 | 10,450 10 | 474 41 | 651 25 | 559 13 |
| 1916 | 24,024 95 | 13,085 28 | 10,875 02 | 1,267 89 | 2,173 02 | 566 19 |
| 1917 | 33,012 20 | 13,503 87 | 11,017 49 | 2,282 80 | 1,364 29 | 566 19 |
| 1918 | 24,468 93 | 11,646 14 | 10,318 29 | 2,252 50 | 934 67 | 576 41 |
| 1919 | 24,431 74 | 11,991 01 | 10,422 31 | 1,658 71 | 1,074 78 | 576 41 |
| 1920 | 40,741 91 | 13,091 88 | 10,373 15 | 1,474 82 | 1,004 30 | 478 56 |
| 1921 | 20,987 88 | 10,480 44 | 9,252 13 | 721 37 | 744 65 | 570 09 |
| 1922 | 20,912 32 | 10,663 01 | 10,143 83 | 364 78 | 583 05 | 570 09 |
| 1923 | 23,819 67 | 10,877 77 | 10,441 49 | 752 64 | 772 16 | 570 09 |
| 1924 | 23,089 21 | 10,519 80 | 10,298 06 | 1,299 55 | 709 67 | 581 70 |
| 1925 | 32,344 06 | 11,270 67 | 10,583 69 | 1,407 28 | 694 58 | 591 43 |
| 1926 | 40,446 58 | 11,696 04 | 10,752 26 | 1,679 84 | 694 58 | 608 23 |
| 1927 | 39,803 83 | 12,068 07 | 11,175 37 | 1,967 65 | 783 51 | 608 23 |
| 1928 | 51,833 69 | 13,547 74 | 11,492 67 | 2,020 73 | 714 83 | 601 89 |
| 1929 | 70,936 42 | 13,413 91 | 11,116 41 | 2,367 01 | 654 94 | 619 65 |
| 1930 | 53,418 32 | 12,608 59 | 11,085 44 | 1,635 97 | 796 28 | 616 25 |
| 1931 | 29,078 16 | 9,247 64 | 10,533 88 | 1,605 52 | 562 65 | 615 36 |
| 1932 | 10,629 76 | 4,595 89 | 8,000 57 | — | — | — |
| Totals | — | — | — | $27,503 41 | $20,391 42 | $13,989 57 |

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[18] Rodkey, R G, *Preferred Stocks as Long-Term Investments* (Ann Arbor University of Michigan, Bureau of Business Research, 1932) In addition to tests shown here, others are given for railroad companies in which preferred stocks are sometimes preceded by bonds Of two tests made of industrial preferreds not preceded by any bonds, the test in which the list was selected on the basis of market activity of the preferred rather than of the common is used here The whole study merits a careful perusal by the student of investments

MARKET VALUES AND CASH INCOMES OF COMMON AND PREFERRED STOCKS OF TEN INDUSTRIAL CORPORATIONS WITHOUT FUNDED DEBT

(Market Values as of January 2 of Given Year)

| | Market Value | | Dividends | |
|---|---|---|---|---|
| *Year* | *Common* | *Preferred* | *Common* | *Preferred* |
| 1908 | $10,000 00 | $10,000 00 | $ 262 87 | $ 894 44 |
| 1909 | 17,010 00 | 13,243 15 | 366 23 | 899 64 |
| 1910 | 20,487 19 | 14,086 64 | 308 57 | 912 86 |
| 1911 | 13,411 58 | 12,109 65 | 283 26 | 851 18 |
| 1912 | 13,925 45 | 12,412 21 | 292 52 | 839 39 |
| 1913 | 18,299 55 | 13,088 00 | 283 26 | 744 33 |
| 1914 | 17,542 94 | 12,425 60 | 434 24 | 693 47 |
| 1915 | 15,251 08 | 11,912 87 | 283 26 | 642 60 |
| 1916 | 37,989 00 | 14,979 33 | 730 95 | 716 99 |
| 1917 | 34,049 66 | 16,118 52 | 1,429 39 | 1,137 81 |
| 1918 | 38,331 68 | 16,560 96 | 1,221 41 | 1,511 35 |
| 1919 | 57,730 85 | 18,980 04 | 2,941 50 | 1,482 32 |
| 1920 | 97,446 14 | 20,188 10 | 4,454 18 | 1,475 62 |
| 1921 | 62,141 64 | 17,462 06 | 2,062 04 | 1,219 96 |
| 1922 | 47,796 04 | 15,143 24 | 816 31 | 578 30 |
| 1923 | 52,035 65 | 16,313 43 | 943 64 | 573 16 |
| 1924 | 42,500 94 | 14,295 76 | 1,003 62 | 590 78 |
| 1925 | 62,217 52 | 17,804 58 | 2,817 49 | 1,369 91 |
| 1926 | 71,111 77 | 20,337 48 | 3,695 43 | 1,629 13 |
| 1927 | 74,574 89 | 20,363 95 | 3,812 71 | 1,589 24 |
| 1928 | 91,506 16 | 21,580 61 | 4,600 86 | 1,188 74 |
| 1929 | 105,616 99 | 21,232 56 | 4,048 93 | 1,062 77 |
| 1930 | 86,697 05 | 19,159 81 | 3,081 92 | 1,061 44 |
| 1931 | 36,874 01 | 16,959 34 | 1,602 51 | 1,045 14 |
| 1932 | 16,663 13 | 11,113 63 | — | — |
| Totals | — | — | $41,777 10 | $24,710 57 |

stocks of a group of ten corporations, and the second showing similar data for a group of ten corporations with capital structures consisting solely of preferred and common stocks[19] The tables indicate clearly the greater price and income variations of common stocks as compared with preferred stocks, and in turn the greater stability of bonds in these two respects over either of the two kinds of stock The choice of both the initial and final years give the results an appearance that may influence the reader unduly By making 1908, a year of low stock prices, the base year, the showing for the stocks is made to appear very favorable in intermediate years Thus, if the test shown in the first table had been initiated a year later, on January 2, 1909, the $10,000 would have purchased only half as many common shares, about two thirds as many preferred shares and about seven eighths as many bonds In a corresponding manner, the relative income would have been higher for preferred stocks and bonds as compared with common stocks if any of the immediately succeeding years had been used as a starting point [20] The importance of this comment may be emphasized by taking January 2, 1910, as a starting point and assuming that the relative proportions among prices in the several years and between price and income in each case are continued as shown in the first table

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[19] *Ibid* , pp 15, 24

MODIFIED RESULTS FOR PREFERRED STOCKS CONSTANTLY PRECEDED BY BONDS, USING 1910 AS THE BEGINNING YEAR

| | MARKET VALUE | | | DIVIDENDS | | Interest on |
|---|---|---|---|---|---|---|
| *Year* | *Common* | *Preferred* | *Bonds* | *Common* | *Preferred* | *Bonds* |
| 1910 | $10,000 00 | $10,000 00 | $10,000 00 | $ 139 81 | $ 399 97 | $ 517 97 |
| 1915 | 4,066 81 | 6,409 96 | 8,901 28 | 176 75 | 387 88 | 476 26 |
| 1920 | 15,180 67 | 7,797 43 | 8,835 73 | 549 49 | 598 15 | 407 63 |
| 1925 | 12,050 69 | 6,712 73 | 9,015 07 | 524 32 | 413 69 | 503 77 |
| 1930 | 19,902 50 | 7,509 58 | 9,442 45 | 609 53 | 474 26 | 524 91 |
| 1932 | 3,960 42 | 2,737 28 | 6,814 80 | — | — | — |
| Total Income 1910–1931, Inclusive | | | | $9,920 87 | $11,450 07 | $10,870 77 |

The result of the change in the base year to 1910 is to raise the relative price paid for the common stock so that the income from the dividend income on $10,000 for the period 1910 to 1931 is lower than for either preferred stocks or bonds The income figures, while incomplete, also indicate that the 1910 investor in common stocks, as compared with the recipients of fixed incomes during the early years, would have fared poorly The greater depreciation of the common stocks between 1910 and 1915, and 1930 and 1932, is also more apparent

In order to avoid the bias that the use of any base year is almost certain to introduce for any but the most skillful reader, the year-by-year comparative experience with respect to income and appreciation is presented in the following tables for both preferred stocks constantly preceded by bonds and those preceded by no funded debt (pages 159 and 160).

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[20] For the study as a whole, it may be argued that a balance has been achieved by both beginning and ending in depression years This bias with respect to the base year is most strikingly evinced in the conclusions of some studies in which the low values of common stocks in 1932 and 1933 are treated as unimportant because they were higher than the prices of twenty five or thirty years before, ignoring their relation to the prices of years immediately prior

### COMPARATIVE INVESTMENT EXPERIENCE OF COMMON AND PREFERRED STOCKS AND BONDS OF TEN LARGE CORPORATIONS

(Percentages Based on Market Value at Beginning of Each Year)

| | Cash Yields | | | Cash and Appreciation | | |
|---|---|---|---|---|---|---|
| *Year* | *Common* | *Preferred* | *Bonds* | *Common* | *Preferred* | *Bonds* |
| 1908 | 4.5% | 5.5% | 6.1% | 108.7% | 53.5% | 20.5% |
| 1909 | 2.1 | 4.2 | 5.4 | 33.5 | 17.6 | 8.0 |
| 1910 | 1.4 | 4.0 | 5.2 | −29.3 | −12.1 | 3.1 |
| 1911 | 1.5 | 4.8 | 5.0 | −18.6 | − 6.8 | 1.5 |
| 1912 | 1.3 | 5.7 | 5.1 | 3.4 | 9.2 | 5.6 |
| 1913 | 1.8 | 11.7 | 5.2 | −23.8 | − .5 | .9 |
| 1914 | 2.5 | 6.6 | 5.3 | − .9 | .7 | 3.3 |
| 1915 | 4.4 | 6.1 | 5.4 | 124.5 | 27.6 | 9.4 |
| 1916 | 5.3 | 16.6 | 5.2 | 42.7 | 19.8 | 6.5 |
| 1917 | 6.9 | 10.1 | 5.1 | −19.0 | − 3.7 | − 1.2 |
| 1918 | 9.2 | 8.0 | 5.6 | 9.1 | 11.0 | 6.6 |
| 1919 | 6.8 | 9.0 | 5.5 | 76.7 | 18.1 | 5.1 |
| 1920 | 3.6 | 7.7 | 4.6 | −44.9 | −12.3 | − 6.2 |
| 1921 | 3.6 | 7.1 | 6.2 | 3.1 | 8.9 | 15.8 |
| 1922 | 1.7 | 5.5 | 5.6 | 15.7 | 7.5 | 8.6 |
| 1923 | 3.2 | 7.1 | 5.5 | .1 | 3.8 | 4.1 |
| 1924 | 5.6 | 6.8 | 5.7 | 45.7 | 13.9 | 8.4 |
| 1925 | 4.4 | 6.2 | 5.6 | 29.4 | 9.9 | 7.2 |
| 1926 | 4.2 | 5.9 | 5.7 | 2.6 | 9.1 | 9.6 |
| 1927 | 4.9 | 6.5 | 5.4 | 34.2 | 18.8 | 8.3 |
| 1928 | 3.9 | 5.3 | 5.2 | 40.8 | 4.3 | 2.0 |
| 1929 | 3.3 | 4.9 | 5.6 | −21.4 | 1.1 | 5.3 |
| 1930 | 3.1 | 6.3 | 5.6 | −42.5 | −20.3 | .6 |
| 1931 | 5.5 | 6.1 | 5.8 | −57.9 | −44.2 | −18.2 |

These particular samples of Rodkey, like those of Jackson, have the advantage of being issues of the same companies, whereas random samples might result in a comparison of the preferred stocks of one industry with the common stocks of another. They are open to the objection of selection on the basis of market activity without regard to investment quality (in order to avoid the possible opposite bias of influencing results by some less mechanical basis of choice). As a result the common stocks were not necessarily dividend payers—that is, of investment character—and even the preferreds showed marked fluctuations in disbursements. Probably no method of selection could satisfy everyone, since each investor is interested not in preferred or common stocks in the abstract but in a particular class or quality. He is likely to feel much as a man about to marry might feel towards general statistics on the women of the country or on divorce probabilities.

COMPARATIVE INVESTMENT EXPERIENCE OF COMMON AND PREFERRED STOCKS OF TEN CORPORATIONS WITHOUT FUNDED DEBT

(Percentages Based on Market Value at Beginning of Each Year)

| | Dividend Yields | | Dividends and Appreciation | |
|---|---|---|---|---|
| *Year* | *Common* | *Preferred* | *Common* | *Preferred* |
| 1908 | 2.6% | 8.9% | 72.7% | 41.4% |
| 1909 | 2.2 | 6.8 | 22.6 | 13.2 |
| 1910 | 1.5 | 6.5 | −33.0 | − 7.6 |
| 1911 | 2.1 | 7.0 | 5.9 | 9.5 |
| 1912 | 2.1 | 6.8 | 33.5 | 12.2 |
| 1913 | 1.6 | 5.7 | − 2.6 | .6 |
| 1914 | 2.5 | 5.6 | −10.6 | 1.5 |
| 1915 | 1.9 | 5.4 | 151.0 | 31.1 |
| 1916 | 1.9 | 4.8 | − 8.5 | 12.4 |
| 1917 | 4.2 | 7.1 | 16.8 | 9.8 |
| 1918 | 3.2 | 9.1 | 53.8 | 23.7 |
| 1919 | 5.1 | 7.8 | 73.9 | 14.2 |
| 1920 | 4.6 | 7.3 | −31.4 | − 6.2 |
| 1921 | 3.3 | 7.0 | −20.2 | − 6.3 |
| 1922 | 1.7 | 3.8 | 10.6 | 11.6 |
| 1923 | 1.8 | 3.5 | −16.5 | − 8.9 |
| 1924 | 2.4 | 4.1 | 48.8 | 28.7 |
| 1925 | 4.5 | 7.7 | 18.8 | 21.9 |
| 1926 | 5.2 | 8.0 | 10.1 | 8.1 |
| 1927 | 5.1 | 7.8 | 27.8 | 13.8 |
| 1928 | 5.0 | 5.5 | 20.5 | 3.9 |
| 1929 | 3.8 | 5.0 | −14.1 | − 4.8 |
| 1930 | 3.6 | 5.5 | −54.0 | − 5.9 |
| 1931 | 4.4 | 6.2 | −50.5 | −28.3 |

**Income characteristics of common stock.** The characteristic of chief importance, with which most of the studies cited have been concerned, is that of income or return. The total return in many of the studies has been considered as including both dividends and appreciation. In investment work it is often necessary to consider them separately. If accumulation of property is the sole objective, appreciation is as useful as a dividend, but where investments are employed primarily to provide an income, the holder will differentiate sharply between the two forms of return. In the first place, most investors hesitate to use appreciation as spendable income partly because of the feeling that such gains represent "capital" rather than "income," and partly because of the accounting precept which considers no appreciation a profit unless it is "realized" by a sale. In the second place, appreciation is so frequently a fleeting factor that it makes an unsatisfactory basis for spending, which is the common reason for seeking an income

Separate generalizations are therefore desirable for each of the two income factors With regard to dividend yields of common stocks, it may be said that they have been much more variable than in the case of yields of preferred stocks and bonds in two respects (1) the dividends fluctuate more from year to year because any changes in the residual income first affect the common stockholder, and (2) yields at any given time vary more widely among common stocks than among fixed income securities, partly because of the greater variations in risk and partly because corporations differ greatly in the percentage of net profit that they distribute A stock that distributes little or nothing is unattractive in an investment program calling for a maximum of current income, even though it may be desirable on other counts Prior to 1930, or possibly 1935, common stocks as a class probably offered a cash income that was no higher and probably somewhat lower on the average in relation to market price than the similar return on fixed income securities Since then the stock and bond markets seem to have parted company and common stock dividend yields have been materially higher

Common stocks are of chief interest in those investment programs where current income can be sacrificed to some extent for future appreciation and income, and where fluctuations in year-to-year income will not cause undue hardship They are especially valuable as an inflation hedge for individual investors In an individual's investment fund, any decrease in dividend income that merely equals a decline in the cost of living works no hardship, just as any increase in dividends that equals a rise in the cost of living makes no real improvement in one's economic status, although most welcome in adjusting income to inflation The sample of preferred and common stock dividend records during the unusually severe business decline following 1929, given in the preceding chapter, illustrates, to a limited extent, how different types of companies fared Only large companies that paid dividends on their common stock in 1929 were included

**Appreciation influences.** Besides the fluctuations that grow out of the conditions peculiar to the individual corporation, four general factors, sometimes interdependent, make for appreciation or depreciation More sensible than any broad indorsement or condemnation of common stocks is the recommendation that investment policy be shaped by a consideration of whether these factors are favorable to appreciation for a given corporation at a given time Obviously this point of view admits that speculation is present, but in view of the recognition of the purchasing power risk that is present in even choice bonds, it is not a valid reason for rejecting common stock commitments

The four general factors making for appreciation or depreciation of common stocks are (1) the growth factor, arising from the reinvestment of earnings, (2) the influence of the so-called business cycle upon business profits, (3) changes in the rate of capitalization of earnings, and (4) movements in the general level of commodity prices

**Growth through reinvested earnings.** The growth of the common stockholders' investment might be compared with interest accrued on a bank deposit, which accumulates to the credit of the owner and is reinvested rather than spent If the analogy ended here, common stocks would enjoy no special advantage Any special merit must lie rather in the ability of the corporation to reinvest the retained profits at a rate of return in excess of the amount which the investor could make with the same funds Many leading American corporations during normal times have shown an ability to reinvest earnings at a very handsome rate of return In such cases the stockholder is able to enjoy appreciation growing out of "compound interest" at a high rate The reinvestment opportunities are of different kinds, and may arise from a market expansion due to (1) population growth, (2) a rising standard of living, (3) the satisfaction of new wants, or (4) the satisfaction of old wants through more efficient methods; or they may lie in the retirement of senior obligations of the corporation [21] A consideration of the growth and rate of profit possibilities of an industry and the particular corporations in it are a more accurate foundation on which to base hopes of appreciation than faith in general growth

This growth factor suggests why some investors favor low-yield instead of high-yield common stocks Those corporations with the greatest opportunities for profitable reinvestment would tend to disburse the smallest dividends, and the market appraisal would also tend to be highest for those common stocks that held the greatest promise of future enhancement

This situation is adequately illustrated by the tables on pages

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[21] Diminishing growth or even stability of population is not inconsistent with continuing growth of capital equipment Studies by Carl Snyder seem to indicate little change in the rate of growth of production during the eighty years up to 1930 "Overproduction and Business Cycles," *Proceedings of the Academy of Political Science*, June, 1931, Vol XIV, pp 333–358 For later change, see his *Capitalism the Creator* (New York The Macmillan Co, 1940)

164 and 165 In the first one, headed "High Yield Group," are shown the results of an initial investment of $1,000 in each of twenty common stocks with a high current yield, made in the year 1913 and carried through the year 1928 The second table, headed "Low Yield Group," gives the results of a similar investment in stocks with a low initial yield

The difference between the two results is rather surprising In the first case, increases in subsequent dividends raised the original yield of 6 7 per cent to 12 7 per cent, while the appreciation in the market value of the stock between the first and the last year was only $1,653 per stock, or a total of $33,060 In the second group, the original current yield was raised from 3 8 per cent to 25 5 per cent, while there was an appreciation of $6,800 in the principal value of the holdings of the average stock, or a total of $136,000

**Cyclical price movements** The second factor mentioned as a major appreciation influence was the cyclical movement of stock prices, brought about by alterations of business prosperity and depression over a period of years Far more significant than the lesser price variations that occur from week to week, these major movements produce both depreciation and appreciation The largest possibilities of loss of principal arise from this factor As to the propriety and wisdom of attempting to profit from these movements in connection with an investment program, more will be said in Chapter 25 While appreciation from this direction is difficult to achieve, it offers one of the largest potential sources of gain Two difficulties that may interfere with its collection by the majority of individual investors may be mentioned here first, savings available for investment are most plentiful in times of prosperity, and the need for realizing on one's investment is most likely to be urgent during depression, and secondly, the weight of popular sentiment makes profit-taking psychologically difficult at times when business conditions are good and stock prices inflated, just as it makes it hard for most persons to make up their minds to buy when conditions are most unfavorable and stocks are at a bargain

**Changes in rates of capitalization.** The third factor affecting common stock appreciation is the rate at which earnings and dividends are capitalized, or the ratio between return and market value This influence is closely related to the business cycle through interest rates, the latter fluctuating with the stage of the cycle Since common stocks and bonds are alternative forms of investment for many investors, when conditions produce low bond yields, the tendency is strong for stock yields to decline also, and

### *HIGH YIELD GROUP*

(The following tabulation shows the result of investing $1,000 in the common stock of each of the companies named at a price halfway between the high and low of 1913 and carrying the investment through to 1928)

| *Name of Company* | YIELD ON 1913 COST *Initial* | *1914* | *1915* | *1920* | *1924* | *1928* | *Average* | *Market Value Average 1928* |
|---|---|---|---|---|---|---|---|---|
| American Smelting & Refining | 6.1% | 6.1% | 6.1% | 6.1% | 7.6% | 12.0% | 7.3% | $3,480 |
| Detroit Edison | 6.4 | 6.4 | 6.4 | 7.3 | 7.3 | 7.3 | 6.9 | 1,778 |
| National Lead | 6.1 | 6.1 | 6.1 | 12.2 | 16.3 | 21.2 | 11.3 | 4,975 |
| National Transit | 6.7 | 6.7 | 4.4 | 11.6 | 6.2 | 5.6 | 6.9 | 480 |
| So California Edison | 6.5 | 6.5 | 7.8 | 9.1 | 10.4 | 9.6 | 8.3 | 2,395 |
| Tampa Electric | 6.8 | 6.8 | 6.8 | 6.8 | 6.8 | 7.2 | 6.9 | 2,476 |
| Union Pacific | 6.6 | 8.0 | 5.3 | 6.7 | 6.7 | 7.7 | 6.8 | 1,734 |
| Borden Company | 6.6 | 6.6 | 6.6 | 6.6 | 6.6 | 9.8 | 7.1 | 2,780 |
| Utah Copper | 6.0 | 6.0 | 8.5 | 12.0 | 8.0 | 16.0 | 9.4 | 4,140 |
| Swift & Company | 6.7 | 6.9 | 7.1 | 7.6 | 9.5 | 9.6 | 7.9 | 1,653 |
| American Tel & Tel | 6.5 | 6.5 | 6.5 | 6.5 | 7.5 | 7.5 | 6.8 | 1,610 |
| Baltimore & Ohio R R | 6.1 | 6.1 | 6.1 | 0 | 5.1 | 6.1 | 4.9 | 1,161 |
| Northern Pacific | 6.3 | 6.3 | 6.3 | 6.3 | 4.5 | 8.9 | 6.4 | 936 |
| Heywood-Wakefield | 6.7 | 6.7 | 6.7 | 14.8 | 11.5 | 0 | 7.7 | 432 |
| American Screw | 7.4 | 4.4 | 5.2 | 11.1 | 7.8 | 4.4 | 6.7 | 616 |
| Standard Oil of Nebraska | 7.4 | 6.2 | 6.2 | 6.2 | 9.3 | 13.2 | 8.1 | 2,128 |
| General Cigar | 8.8 | 8.8 | 8.8 | 13.3 | 17.7 | 17.7 | 12.5 | 4,210 |
| National Biscuit | 6.0 | 6.0 | 6.0 | 6.0 | 20.8 | 46.1 | 15.1 | 10,555 |
| P Lorillard Company | 7.2 | 8.6 | 7.4 | 8.2 | 8.2 | 0 | 6.6 | 854 |
| G W Helme Company | 6.9 | 6.9 | 6.9 | 9.7 | 17.2 | 45.0 | 15.4 | 4,658 |
| Average | 6.7% | 6.6% | 6.6% | 8.4% | 9.8% | 12.7% | 8.5% | $2,653 |
|  |  |  |  | Original investment in each stock |  |  |  | 1,000 |
|  |  |  |  | Average profit on each stock |  |  |  | $1,653 |

## LOW YIELD GROUP

(The following tabulation shows the result of investing $1,000 in the common stock of each of the companies named at a price halfway between the high and low of 1913 and carrying the investment through to 1928)

| | Yield on 1913 Cost | | | | | | | Market Value |
|---|---|---|---|---|---|---|---|---|
| *Name of Company* | *Initial* | *1914* | *1915* | *1920* | *1924* | *1928* | *Average* | *Average 1928* |
| American Power & Light | 4.6% | 6.2% | 6.2% | 6.2% | 15.7% | 84.3% | 20.5% | $16,003 |
| American Radiator | 2.2 | 2.8 | 4.3 | 7.7 | 9.7 | 16.4 | 7.2 | 5,275 |
| Delaware, Lackawanna, and Western | 4.8 | 4.8 | 4.8 | 4.8 | 5.8 | 3.4 | 4.7 | 720 |
| Johns Manville | 3.6 | 3.6 | 0 | 9.1 | 21.8 | 23.5 | 10.3 | 11,689 |
| Procter & Gamble | 3.0 | 3.1 | 3.2 | 4.9 | 5.7 | 12.6 | 5.4 | 4,521 |
| Springfield Fire & Marine | 4.0 | 5.0 | 5.0 | 8.0 | 11.2 | 8.7 | 7.0 | 4,960 |
| Standard Oil of Kentucky | 1.9 | 9.2 | 9.4 | 14.1 | 41.7 | 114.6 | 31.8 | 38,626 |
| Western Union Tel Co | 4.6 | 6.0 | 6.5 | 10.8 | 10.8 | 12.4 | 8.5 | 2,640 |
| R J Reynolds | 4.4 | 6.0 | 8.2 | 3.7 | 20.2 | 12.9 | 9.2 | 4,078 |
| F W Woolworth | 4.7 | 6.2 | 7.0 | 8.2 | 10.7 | 40.2 | 12.8 | 16,108 |
| American Car & Foundry | 4.5 | 4.5 | 4.5 | 27.2 | 28.3 | 25.5 | 15.8 | 4,246 |
| Baldwin Locomotive | 4.4 | 4.4 | 0 | 15.5 | 15.5 | 15.5 | 9.2 | 5,772 |
| Quaker Oats | 4.2 | 4.2 | 4.2 | 7.0 | 13.1 | 22.0 | 9.1 | 8,874 |
| United Fruit | 4.8 | 4.8 | 4.8 | 6.8 | 13.3 | 16.8 | 8.6 | 4,264 |
| Ingersoll Rand | 4.2 | 5.2 | 15.6 | 12.5 | 70.0 | 48.4 | 26.0 | 9,548 |
| Sears Roebuck & Co | 3.8 | 3.8 | 3.8 | 8.6 | 8.6 | 14.5 | 7.2 | 8,080 |
| Amoskeag Co | 4.5 | 4.5 | 4.5 | 17.8 | 0 | 7.2 | 6.4 | 3,413 |
| Standard Oil of California | 4.3 | 4.3 | 4.3 | 12.2 | 27.8 | 4.3 | 9.5 | 1,144 |
| Standard Oil of New York | 1.2 | 8.1 | 8.1 | 16.2 | 16.9 | 9.6 | 10.0 | 2,226 |
| Vacuum Oil | 3.1 | 3.1 | 3.8 | 3.8 | 23.0 | 17.7 | 9.1 | 3,806 |
| Average | 3.8% | 5.0% | 5.4% | 10.3% | 18.5% | 25.5% | 11.4% | $7,800 |
| Original investment in each stock | | | | | | | | 1,000 |
| Average profit on each stock | | | | | | | | $6,800 |

vice versa[22] This relationship is not exact but is a tendency operative over the period of the business cycle, although since 1935 they have shown much less relation than formerly The yield of common stocks may also be affected by a change in the attitude towards their relative risk A change of this sort occurred between 1925 and 1928, with the result that one of the staunchest advocates of common stock investment was moved to give warning in the latter year:

> These Dow-Jones industrial stocks which averaged 11 90 per cent earnings to selling price throughout the last quarter century are now in a year of unusual prosperity preceded by seven years of expanding credit, selling on an earnings basis of only about 5 4 per cent During the last period of general prosperity and expanded credit the ratios of earnings to selling price of these stocks were 1917, 28 5 per cent, 1918, 33 1 per cent, 1919, 22 5 per cent, and 1920, 15 0 per cent Never before, except in a period of severe depression, has the earnings ratio ever approached the present basis of 5 40 per cent.[23]

**Commodity prices and common stocks.** Because rising commodity prices tend to raise the value of physical property and make it easier to earn at least "nominal" profits on sales of inventory, they are generally regarded as favorable to common stock appreciation Whether these gains are "real" gains in value or merely "nominal" will depend upon whether or not the gains are more than sufficient to balance the depreciation in the purchasing power of money that a rising price level brings Able management, "trading on equity," or other conditions may favor a high rate of appreciation for a given common stock during a period of rising prices Only weak or speculative bonds and preferred stocks will receive even small benefits from inflation Industrial stocks are consequently the most favored form of "hedge" against rising prices The public service corporations may or may not perform in the same manner, depending upon whether or not they are helped by an expanded volume of business, resulting from the stimulation of rising prices, more than they are harmed by a rising level of operating costs pressing against selling prices that are tardily adjusted to new conditions by the regulatory commissions With extreme currency depreciation, even the more favorably situated industrial common stocks may prove an inadequate protection to purchasing power, although they probably represent the best protection available, short of an export of capital to another country not so affected

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[22] See Figure 23 and the discussion in Chapter 25

[23] Rose, Dwight C, *Investment Management*, Vol II, p 154 Quoted from an address made Dec 27, 1928, before the American Statistical Association The use of the years from 1917 to 1919 as a basis for comparison is probably unfortunate in that profits in those years were the result of war conditions and were probably regarded by the stock market as temporary and abnormally high

**Summary of common stock characteristics.** From the discussion and materials presented in this chapter, the chief characteristics that determine investment fitness should be apparent Both cash income and market price are more variable for common stocks than for either bonds or preferred stocks These characteristics should bar their purchase with funds that are to be used to support fixed dollar liabilities of financial institutions, or that are desired by individuals as liquid funds to meet emergencies If this rule were followed by financial institutions, it would almost completely eliminate common stock for banks and life insurance companies, both of which have relatively small surpluses over dollar liabilities Fire and casualty insurance companies with sizable net worths would be permitted substantial common stock commitments

Because of the greater uncertainty with respect to the fortunes of the individual corporation, diversification is much more essential in the case of common stocks than of high-grade bonds The need for diversification, for a liquid emergency fund, and for greater skill in the selection of common stocks than is necessary for bonds—all these factors suggest that common stocks are less suitable for the small than for the large investor With diversification, a more certain result is likely, although the fact that different statistical studies show such extremely variant results should be a warning that no reliable prediction can be made that "average" results will be obtained from other samples of stocks at other times No "investment experience" table can possibly have the usefulness for predicting future results that the mortality tables have for the life insurance business Attention should always be given to cyclical conditions and probable trends of the commodity price level The selection of suitable stocks will always involve skillful care if the most satisfactory results are to be obtained

The two most powerful arguments for the inclusion of common stocks when conditions justify their recommendation on other grounds are (1) the possibility of a higher return when the stocks are purchased under favorable conditions and held for a substantial period, and (2) the hedge they provide against a rising price level Wherever the investment fund is created to provide an income for living purposes, the purchasing power of money is highly important Under such circumstances common stocks provide a desirable supplement to fixed income securities During periods of rising prices they should at least mitigate the burden of a rising cost of living, when prices are falling and dividends are lowered, the decreased dollar income will be compensated for by the lowered cost of living Until the ideal of a currency with stable purchasing power has been achieved, even trust funds should be arranged with reasonable restrictions to permit some investments that will at least partially protect beneficiaries against inflation Possibly such a step would require more activity and vigilance than certain institutional trustees have been accustomed to, but the logic of such a policy is clear.

# Part II

# Investments, Financial Analysis

# 7

# Financial Analysis—General

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**Permanency of investor's relation with corporation.** Since the investor's relation with the corporation is more often than not a long-term one, each investment should be closely examined before it is acquired The contractual features present in a given security are important and deserve very careful study, yet the ultimate investment value of a security depends on other factors as well Of what use are the most stringent promises of a corporation to maintain a certain ratio of current assets to current liabilities, to provide for annual sinking funds, to pay interest or principal, or to carry out any of the other promises found in typical bond or preferred stock contracts, if the corporation is unable to earn enough to pay its operating expenses? On the other hand, the simple, unsecured promise of another corporation that is in the hands of competent and honest management, and that has healthy and expanding earnings, may involve a minimum of investment risk

It may seem at first that no very intricate problem is involved in the appraisal of the exact financial condition of a corporation at a given time, but that this may be done by a cursory inspection of its current balance sheets and income accounts Such might be the case if one were interested only in conditions at the moment This, however, is not the situation generally confronting the man who contemplates the purchase of a corporation's securities Except in those relatively few instances where short-term notes are purchased, the investor, whether he buys bonds, preferred stocks, or common stocks, trusts his funds to the enterprise for a substantial period of time In a great majority of cases he does this without retaining an effective voice in the subsequent management of the corporation's affairs, for only in unusual cases does the investor, by virtue of the size of his interest, acquire a dominating influence in determining corporate policies.

The purchaser of bonds or notes may look forward to an ultimate repayment of principal when the obligation becomes due, although the maturity of bonds is frequently so remote that it has no practical significance The purchaser of preferred or common stocks, on the other hand, can terminate his relations with the enterprise only by selling his holdings therein The preferred stockholder, it is true, may receive his principal back, where the corporation exercises a call or redemption privilege, and both preferred and common holders may receive their principal from the corporation as a result of liquidation So far as the investor is concerned, however, there is no certainty as to when the call privilege will be exercised, while the liquidation of corporations is an unusual event and may result in complete loss of principal rather than in a return thereof

This more or less permanent relationship into which investors enter with the users of their funds makes it imperative for them to inquire not only as to the present financial status of the borrowing corporation, but as to its past record and future prospects as well This situation exists whether they contemplate the purchase of first mortgage bonds, preferred stocks, or common stocks However, the stockholders of a corporation do have a somewhat more vital stake in the success of the enterprise than do the bondholders The bondholders, and, in fact, the preferred stockholders, are reasonably content if charges and dividends are earned by a sufficient margin Beyond this point their interest ceases The common stockholders, however, often require that the corporation expand and that earnings increase, for it is in this way that their investment will prove most profitable

In other words, quite apart from a consideration of the particular type of stock or bond purchased, the manner in which it is secured, its priorities over the other obligations of the corporation, and the various restrictions and benefits found in the accompanying contract, investors are also interested in those factors bearing on the financial stability of the issuing corporation, its position in the industry, its prospects for growth, the particular risks inherent in the industry, the previous record of the management in control, and the financial record and existing condition of the company These are all matters of vital concern to the investor and should be carefully analyzed in respect to every commitment Corporate investments have been referred to here, but the need for an accurate financial analysis applies as well to the purchase of government, state, and municipal securities, although the procedure will differ considerably

**General analysis factors.** Before proceeding to the consideration of the securities of particular corporations, it is useful to outline and examine in this chapter certain analytical factors that have general significance This discussion will at once serve as a treatment of basic factors and help the reader to remember fundamentals while studying the many details in the later treatment of specific kinds of business investments [1]

The study of a corporation's securities may be divided into the consideration of (1) the general background factors, which may include a study of the industry, and then (2) the financial factors that are analyzed from the financial statements The legal details of the specific investment contract, which have been mentioned previously, might be thought of as the third element

**Selection of the industry.** Some investors make it a general practice to select first the industries in which they will invest before picking out the securities of specific enterprises Such a policy would be most important where a semi-speculative attitude was held with the intention of shifting from industry to industry with changing business cycle conditions Even where fairly permanent investment is planned, it may be argued that the greatest safety and appreciation are likely where the general industry situation is favorable This argument is most valid where market appreciation is sought in the common stock field because even meritorious profit performance is registered slowly, if at all, when the prevailing feeling is one of pessimism towards the industry At a given time one might, for example, find the coal industry in disfavor while the chemical industry rides high in popular esteem Even bonds will often reflect this market opinion of an industry in their price and yield although to a lesser extent than stocks

Other investors are inclined to make exceptions, particularly where their sole concern is dividend income, because of the belief that the better managed or more fortunately situated companies in an unpopular industry will tend to sell at bargain prices because of popular feeling, that is, offer better yields than the risk of the particular company warrants

When an industry is being surveyed, the purpose is to examine its past record and future prospects with an eye to its probable investment performance The past record will show (1) the year-by-year volume of business and earnings, (2) whether growth or shrinkage is likely to lie ahead, and (3) the relative stability of earning power The analyst should go behind such statistics, to the products of the industry and their markets to judge what the economic future is likely to be for the goods or services sold But an *economic* future is not merely a matter of the community's wanting or needing the output, but also of the industry's being able to produce at costs that will permit profitable operation Production involves labor costs and sometimes material costs So a study of labor conditions, sources of materials, and prices is indicated Since these items require further attention in the study of individual business, illustration and elaboration can be deferred to that point The important thing is to avoid too great reliance upon a statistical record and to be sure to penetrate to the underlying realities that will permit a more thoroughgoing estimate of the future Too great a dependence upon the figures might cause one to ignore such external factors as prohibition creeping up on the liquor industry, a rising tide of labor union domination fatal to reasonable earnings, a possible loss of vital raw materials through war, political disturbances, exhaustion of a natural resource, or a technological revolution that might change the outlook for a whole industry[2]

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[1] For the reader seeking a detailed and systematic check list of points by a commercial banker, see *An Outline for the Analysis of a Company* by John D Dupuis, published by the Robert Morris Associates, 1417 Samson Street, Philadelphia, Pennsylvania

Certain pertinent matters as to the organization of the industry should also receive attention Probably the chief of these are (1) the number and the size of the business units in the field, (2) the extent and kind of competition, (3) the geographical distribution of the industry and the explanatory strategic factors, such as freight rates, location of raw materials or skilled labor, and markets, and (4) the factors that are vital in explaining differences in profit performance, such as managerial skills, patents, tariffs, ownership of low cost natural resources, or location.

**Importance of management.** After the industry has been scrutinized, the individual company is brought under the microscope Before turning to the financial record, one of the most important and least tangible of all the factors contributing to the success of the enterprise should be mentioned, namely management What special genius inspired an unknown and unassuming mechanic by the name of Henry Ford to organize a small automobile company in 1903 so successfully that an initial capital of $25,000 was made to attain a value of over $1,000,000,000 in less than twenty-five years, to say nothing of the other millions of dollars that were paid to the original investors in the form of dividends during this period? American industrial and financial history is replete with similar figures. Recall briefly what Vanderbilt did for the New York Central Railroad, James J Hill, for the roads of the Northwest, and Harriman, for the great Western roads In the steel industry, the name of Andrew Carnegie stands out In many fields, prominent corporate names serve to remind one of genius in invention, production, trade, and finance

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[2] Examples of important industry influences may be had from the pages of *Barron's*, a financial weekly "Variety Chains in New Stage of Development" (wider competition with department stores) Oct 24, 1949, p 12, "Postal Raises Would Re Draw Magazine Picture" (search for federal revenue from an industry, a warning to others), April 4, 1949 The effect of anti-trust activities is illustrated in the requirement that Paramount Pictures, Inc , segregate its theater from its picture making activities (1949)

Huge success is often attained by the dominating influence of one man, but in ordinary practice the investor is perhaps more interested in the existence of a solid, self-perpetuating, and proved management with a past record of honest and efficient performance Quite often today the success of a major corporation is based upon the abilities of an executive team rather than any single person Companies such as General Electric, International Harvester, and American Telephone & Telegraph are typical examples of well-managed enterprises with enviable records of success and fair treatment of security holders This list could easily be extended to considerable length On the other hand, a long list could easily be made to include companies that have been wrecked by poor management Very often, however, instead of a spectacular smash, inferior management is revealed by a gradual deterioration in the position of a business, which may be traced in their financial statements as they are compared with the rest of the industry That individual executives still are significant factors even in today's industrial giants is reflected in the eager interest in news of changes in topflight personnel sometimes marked by open strife and battles for stockholders' proxies

It is, of course, difficult to formulate precise rules for the investor to follow in order to judge the management of corporations To a considerable extent the results of management are shown in the financial reports of the company Eventually, in all cases, the nature of the management becomes apparent, but it is entirely possible, in certain enterprises, for poor management to be concealed for years, so far as the current reports of the company are concerned This is particularly true of those companies that are engaged in financial businesses, such as banks, where the quality of the assets and accruing losses are difficult to judge (In fairness to banks, the informed reader can usually recognize some evidences of conservatism in their financial reports Furthermore, under present supervision an aggressive and ably managed bank may find its position and profits *understated* because of required as well as voluntary allowances for losses that never materialize ) In these enterprises, management is the prime factor in determining the success or the failure of the company, yet the character of the management of such companies is often not recorded in current operating results at all

To emphasize this point, it may be helpful for us to consider a commercial bank One of the essential functions of a bank is the lending of money or credit to its customers, although banks also invest in securities The profits of a bank will depend in part on its ability to extend loans and discounts, for, in general, loans are more profitable than outside investments Under poor management, undesirable loans will be made Yet this situation may not be indicated by the balance sheets of the bank for some time, because loans are often carried at their face value until, for a definite reason, they have to be written down Under poor management, therefore, it is conceivable that current earnings may be shown in excess of their actual amount because proper adjustments have not been made to offset the eventual losses that are bound to occur where proper care and judgment is not exercised

A somewhat similar situation may occur with respect to mortgage companies The principal business of such concerns is the loaning of money on real estate mortgages and the pledging of these loans or mortgages as collateral against which bonds are issued

The extent to which managerial ability is immediately reflected in the financial reports of a company will vary according to the nature of the enterprise.[8] Regardless of the information here disclosed, however, it is often desirable to pursue an entirely independent inquiry as to the record and character of a concern's management The record of its directors and officers in other capacities or in other enterprises is valuable information, where such information is obtainable In other cases, inquiry may be made through banks or other firms with which the concern under consideration does business On the other hand, where securities are sold through investment banking houses, much depends on the character of the originating house The reputation and standing of the investment banker in such cases is important. In fact, when a banking house brings out an issue, it may be assumed that it is thoroughly familiar with the ability and the character of those who are to manage the business, since its reputation depends upon the success of the corporations whose securities it sells. In the case of subsidiary corporations whose underlying securities are being studied, it may be assumed that the management of the operating company is no better than that of the parent company, for in such cases control of these underlying companies is usually absolute, and the policies of the holding company are stamped on the operations of all its subsidiaries.

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[8] For a more detailed discussion of the securities of financial institutions see Chapters 15 and 16

Fortunately much of the ability and character of the management is written in the financial record for those able to read it. But before outlining the financial factors, a brief comment is appropriate on the general factors influential in financial success mentioned above in the discussion of industry selection.

**Markets served.** The purpose of studying the markets served by a given corporation is to judge the probable future sales, their stability and their profitability. The points usually studied are (1) the character of the products or services sold to determine the probable (a) short-term stability of demand and also (b) cyclical stability, (2) the kind of customers, and (3) the character of the competition.

1 (a) *Short-term stability of demand.* The fortunes of a concern can alter radically in a short period of time where the product or service is characterized by style or whim. As an example consider the rapid fluctuation in the condition of individual concerns in certain branches of the textile and clothing industry. In this respect a manufacturer of men's work clothes would occupy a very different situation from one making women's millinery. A great woolen manufacturer whose success was founded on large-scale low-cost production of standard fabrics would lose its advantageous position with the rise of rapidly changing styles and patterns, which made the flexibility of the small concern more important than the differences in production costs. A collar maker of national prestige gave the change in fashion to the collar-attached shirt as the reason for a decline in earnings in 1926 and 1927. Fashions may be made by a Hollywood picture or the popularity of a fad among college students. The toy industry has similarly been swept by waves of popularity for some new trinket.

Even in a giant industry like automobile manufacturing, large changes in sales result from changing model popularity. The largest companies have tried to meet this risk by research of customer preferences and a variety of models designed to give a shot gun coverage of market appeal

The alert investor will be watchful over this factor in many fields Cereal breakfast foods have witnessed something of this style change factor Advertising and promotion may be directed to shaping what is essentially fashion The larger companies in a given field may have a superior appeal to the investor because, like the above mentioned motor maker, they have reduced their risk by selling a variety of products and have demonstrated their ability to maintain their market position over a period of years

Akin to style changes in producing short-run changes in the position of individual companies in an industry are those fields subject to rapid technological changes Probably no industry has illustrated this condition in recent years better than aircraft manufacturing, where radical developments have spelled rapid advance for some companies and rapid decline for others Such a situation is more suitable for speculation than investment and requires continuing research by those making capital commitments if success is to be achieved Some concerns try to meet this risk by generous expenditures for research and development as well as by product diversification. Some companies like du Pont, General Motors, and General Electric have made a special effort to inform the public of their research activities Where these changes are evolutionary rather than rapid, as in the rise of rayon and synthetic rubber, both the investor and the corporation are better able to adjust to the change with a minimum of loss

1 (b) *Cyclical influences in demand* More predictable for their relative effect upon the individual company are the fluctuations in demand that arise from the business cycle Here the comparative record of the past is most helpful as a guide to the probable future The past indicates how the corporation and the industry have fared under changing conditions of prosperity and depression

Luxury goods tend to fluctuate more in volume than the necessities In both classes unit price will be a factor, the lower the unit price the greater the tendency toward stability The merchant of luxury jewelry will see more variation in sales and earnings than the five-and-ten cent store chain Low unit price and the habit of frequent repurchase may be more important to stability than necessity The cigarette manufacturers may do better in depression than the maker of men's suits, although the former is not generally rated as a necessity and the latter is, because of the high unit price of the latter and the possibilities of postponed purchase when times are hard

Durable goods tend to show more variable demand than those that require frequent replacement, and this principle holds in both the field of capital goods for the producer and that of consumption goods The manufacturer of railroad locomotives and freight cars will suffer more in a depression than one who sells supplies and replacement parts to the railroad The automobile manufacturer has a more volatile market than the oil company which sells the gasoline to run the car

A special cyclical factor that may affect the earnings of those who sell even staple consumers' goods is the matter of unstable prices While associated with the cycle these fluctuations may occur independently because of such factors as farm surpluses Notable examples of inventory losses through price decline can be found in such fields as sugar, meat packing, and soap (fats and oils) Rubber has witnessed similar inventory gyrations in the past Some people expect that the stabilizing influence of synthetic rubber may prevent the price excesses that typically preceded the price debacles of the past In contrast, the chain stores, with their rapid turnover, have typically avoided this risk Similarly, the electric utilities selling a service and with virtually no inventory have not had to bear this hazard

2 *Type of customers* One aspect of the customer problem has been touched upon above There are the differences between the industrial and the ultimate retail customer and between the consumers of different income classes The fortunes of a corporation tend to respond to those of its customers A supplier who has a single customer, such as a mail order house or the Federal Government, or only a very few, may be regarded as subject to the special risk of loss of trade from this source In this respect, customer diversification has some of the advantages of product diversification in reducing risk

3 *Character of competition and industry organization* Only in the case of the regulated public service companies do we find recognized and legally approved monopoly Even their success and profit stability are probably the result of other favoring factors such as were mentioned above rather than monopoly alone The disasters to investors in the railroad and street railway fields should serve as a warning in this respect

In other fields, competition is recognized as the natural order, whatever limitations may exist in its practice Patents may offer temporary advantage, and control of a limited supply or of a low-cost supply of a natural mineral resource may yield a monopoly-type advantage Some argue that because of the large share of the business done by a very few large corporations in certain industries the result is monopolistic This charge has been levied against such lines as steel, automobiles, meat packing, tobacco (cigarettes), and rubber goods An examination of the profits of these industries gives little support to the thesis of a monopoly profit return at least so far as return for capital is concerned Very often the highest return is made by some of the more vigorous medium-sized corporations rather than the largest units In some fields, such as meat packing, the earnings of the largest companies are insufficient in most years to make their securities worth as much marketwise as their invested capital at its book value High profits for such an industry may in particular years result from temporary cyclical prosperity or inflation [4]

The study of industry organization should be directed to discovering excessive plant expansion that, once effected, may lead to overcapacity, which leads to destructive competition that may keep even reasonably efficient operators from making ordinary profits for a considerable period Such a situation developed in the paper industry and in certain real estate fields in the late 1920's The adverse condition will persist till the older and less efficient units are retired or demand grows up to the facilities

Under normal competition the investor will seek out those businesses that, because of favorable factors, show the best prospects for satisfactory yield These differential factors may be superior managerial skills reflected in either low production or marketing costs, customer good will, advantageous location, efficient size, patents, or other strategic elements.

**Labor conditions.** The preceding discussion of factors has had to do largely with the income or revenue side of the business We now turn to factors operating on the cost side, which consist of labor and materials The financial costs are analyzed later in the study of the financial statements All business, whether selling goods or services, have labor costs These costs may have no special significance beyond the general one of utilizing labor efficiently In other cases, the labor situation may have overshadowing importance, especially where strong labor unions exist In some fields, such as coal, steel, and railroads, where unions are especially strong, labor costs are among the most potent factors in determining profitability

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[4] This discussion is not intended to imply that monopoly is absent in the American business picture The contrary is most certainly true Monopolistic practices undoubtedly exist, and in view of the importance of competition in protecting the consumer interest, every effort should be directed to repress monopoly and encourage competition Mere size, however, should not invite attack Rather, efforts should go into those areas where careful study indicates the public is paying most dearly for monopolistic practices Since labor costs are typically much more important than capital costs, the consumer is likely to find labor monopoly more expensive than capital monopoly

Often labor costs are identified with wage rates, but to the extent that able management can use a given amount of labor more productively, costs may differ for concerns paying the same rates Such differences will register in differences in profitability of competing concerns In this matter, as in so many others, the financially weak or marginal concerns are the most vulnerable, and companies enjoying the better net income margins are best able to absorb trouble

Wage rates are, however, often a matter of first-rate interest The encouragement of union organization by Federal legislation in the 1930's has made the whole subject of labor relations of the deepest importance to the investor A record of good relations with labor marred by a minimum of industrial strife in the form of strikes is looked upon as favorable, especially when investigation reveals that management has developed the respect and confidence of its labor force over the years by consideration and fair treatment Fully as important as the good treatment itself is its recognition by the worker

In an industry where demand is elastic so that any rise in prices will reduce the volume of business to a critical extent profitwise, the efforts of organized labor to increase labor costs, whether in the form of wage advances or other benefits such as pensions, other welfare payments, or guaranteed annual wages, are of great interest to the investor The presence of substitute goods or services means elastic demand Competing industries may be ready to seize business when a given industry tries to recover increased labor costs by raising prices The rise of the oil and natural gas industries explains the concern of the coal industry over the demands of the United Mine Workers The expansion of the highly competitive trucking industry has made the demands of the potent railroad brotherhoods a hazard to the position of railroad investors The problem is most serious if the unions seek to claim all the financial benefits of improved productivity resulting from technological advances made possible by alert management and the investment of capital, especially when concessions to the consumer are indicated in order to maintain business volume or increased earnings are needed to permit investment in assets that will maintain operating efficiency

**Material supply conditions** Wherever an industry utilizes goods as well as service in its operations, the problems of material sources and costs need to be reviewed for their possible influence upon earning power The factors of continuity of supply and price are the two elements that need to be studied An aluminum producer may be concerned about the *supply* of bauxite drawn from foreign sources, as would users of tin and natural rubber Pulp and paper manufacturers may find the continued availability of suitable timber to operate their facilities a problem In some industries the question of material *prices* may be paramount At times raw material prices ascend to levels that make full recovery of costs from the consumer impossible Yet concerns will continue to operate in order to minimize losses and preserve the position of their organization awaiting the return of more normal conditions

**Other factors** Before concluding any survey of factors relevant to the investment character and quality of a given corporation's securities, the investor should raise the question as to the presence of any other strategic elements The tariff may be such an item Tariffs levied upon certain important articles make it difficult or impossible for them to enter the United States market at a cost that will permit their competition with similar products of domestic manufacture Domestic sugar production, outside of Puerto Rico, is a prime example of an industry that can survive only with the artificial protection of a tariff wall Cotton and woolen goods also regard tariff protection as necessary The automobile industry, on the other hand, is strong enough to make a place for itself in the export markets of the world

Economists have generally opposed tariffs as fostering domestic high-cost industries and diverting the national productive resources from those lines that the nation could carry on most efficiently Their strictures have largely fallen on deaf ears in this country, partly because of the desire to build up "infant" industries (which apparently never grow up), and partly because of the sentimental desire to favor "home industry " In recent years, for military reasons, the tariff, the world over, has received added impetus in the drive for autarchy, or national self-sufficiency

Usually an industry that is efficient enough to stand on its own feet is in a stronger investment position than one dependent upon tariff protection Nevertheless, once a tariff law has been passed in any field, capital and labor acquire a vested interest in its continuance, which has generally prevented repeal or even reduction. The increased interest in America's foreign trade and in the consumers' welfare, however, may bring changes for which the investor should be alert.

Other special factors that arise frequently enough to warrant our mention and that may vitally affect the investment outlook of specific securities are merger possibilities, the sale of certain properties, the development of new or the abandonment of old products or lines of business, anti-trust action by the government, patent infringement suits, and refinancing, recapitalization, or reorganization

**Financial statement information.** After the investor has given sufficient attention to the foregoing factors, his attention will be turned to the record of past performance as reflected in the financial statements

In studying the risks of the business he must center his interest on two essential points the position of the company in the industry and the conditions within the business itself He should make a study of the financial reports that present the actual condition of the company from time to time, and that summarize its earnings during the intervening periods

The two most important statements available to the investor for the purposes of financial analysis are the balance sheet and the income account These records are so important and are so generally used by investors in appraising the financial condition of businesses and the financial risks attached to their securities, that a thorough understanding of them is necessary for the student of investments For the benefit of those who are not familiar with accounting methods, a brief explanation of the nature of these two statements follows

**Balance sheet defined.** The balance sheet may be said to show a cross section of the financial condition of a concern (or individual) at the close of a certain business day. It is a statement of assets, liabilities, and proprietorship interest, and may be interpreted as an equation

Assets = Liabilities + Proprietorship Interest.

On the asset, or debt, side of the balance sheet is a list of all the assets of the corporation, on the liability, or credit, side are indicated the various equities in these assets That which does not belong to creditors belongs to the owners of the business. Thus we find two distinct types of accounts on the "liability" side of the balance sheet· those representing amounts owed to outsiders and those representing amounts owed to the owners, so to speak

We have a somewhat different situation, however, when the corporation suffers losses sufficient to reduce or to impair the original capital, that is, when assets are less than liabilities plus original capital, a deficit occurs This deficit appears as a negative item on the liability side but becomes a positive item if transferred to the asset side of the equation, that is, Assets = Liabilities + Capital (proprietorship) − Deficit (proprietorship), or Assets + Deficit = Capital + Liabilities A deficit is not a real asset, however, it is really an offset to capital

**Analysis of proprietorship accounts.** These very elementary concepts will now be illustrated by hypothetical balance sheets Let us first assume that the financial affairs of Corporation A stood as follows at the close of business, December 31, 1949·

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Cash | $ 300,000 | Accounts Payable | $ 400,000 |
| Accounts Receivable | 600,000 | Notes Payable | 200,000 |
| Inventories | 600,000 | Bonds, 4% | 500,000 |
| Land and Buildings | 1,000,000 | Capital Stock | 1,000,000 |
| Machinery and Equipment | 500,000 | Profit and Loss Surplus | 900,000 |
| | $3,000,000 | | $3,000,000 |

If this company had been liquidated on December 31, and if the assets had all brought their book values, the $3,000,000 of assets would have been distributed as follows $500,000 to the bondholders, $600,000 to noteholders and creditors, and $1,900,000 to the stockholders

Suppose, on the other hand, that the company suffered severe losses during 1949 and that the balance sheet showed the following situation on December 31, instead of the more prosperous one previously suggested

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Cash | $ 100,000 | Accounts Payable | $ 900,000 |
| Accounts Receivable | 200,000 | Notes Payable | 500,000 |
| Inventories | 300,000 | Bonds, 4% | 500,000 |
| Land and Buildings | 1,000,000 | Capital Stock | 1,000,000 |
| Machinery and Equipment | 500,000 | | |
| Profit and Loss Deficit | 800,000 | | |
| | $2,900,000 | | $2,900,000 |

If assets were to be liquidated at their book values, the total receipts would not be $2,900,000, but $2,100,000 This amount would be distributed as follows $500,000 to the bondholders,

$900,000 to the creditors, $500,000 to the noteholders, and the remaining $200,000 to the stockholders The profit and loss deficit here is thus an offset to capital stock and is not an asset in the true sense of the word That is to say, the real book value of the capital account is $200,000, and not $1,000,000, as it appears at first glance The asset "profit and loss deficit," which has been designated an "offset" account, must first be deducted Its appearance on the asset side as a positive item, or on the liability side as a negative item, is necessary to make the books balance

It is possible, of course, that the deficit might be in excess of the amount of capital stock outstanding In cases where this occurs the corporation is said to be "insolvent" That is, the corporation has not enough assets to meet its actual obligations to outside creditors A situation such as this may occur before it is shown on the books of the company Reverting to the balance sheet shown above, one observes that land and buildings are carried at $1,000,000 Assume now that this item is overvalued on the books of the company and is really worth only $700,000 A proper revaluation of these assets would increase the profit and loss deficit to $1,100,000, and the corporation would become insolvent A similar loss might be incurred with the same results with any of the other asset items

From the preceding discussion it is apparent that the owners', or stockholders', interest is merely the residual of value left over after subtracting the liabilities from the assets and is shown as the sum of the Capital Stock plus the Surplus (or minus the Deficit) Because the assets may not be stated at their current market worth, this bookkeeping total of the owners' equity may be an over-or an understatement of the real or market worth of that investment Consequently when the figure is used it is desirable to refer to it as the *book value* of the stock If the amount is divided by the number of shares of stock outstanding, the result is the book value per share

**Balance sheet arrangement.** The illustrative balance sheet used above was purposely stripped to basic essentials for the sake of simplicity For skillful interpretation a knowledge of the details of accounting are useful, but for our immediate purpose of outlining fundamentals, we shall be content with two other ideas needed by the investor in reading the balance sheet The first is the matter of arrangement and classification of the balance sheet items, and the second is the nature of certain other items found with sufficient frequency to require familiarity, especially the item of reserves

Since a primary purpose of the balance sheet is to disclose solvency, or debt-paying ability, the assets are customarily arranged in the general order of their availability to pay debts and the liabilities in the order in which they are likely to require payment The current assets, namely those likely to be converted shortly into cash in the ordinary course of business, are placed first Cash will appear at the head of the list followed by the amounts receivable from customers and then the inventories If the business has some temporary investments that serve as a support to cash they will appear immediately after the cash No special significance attaches to the order in which the fixed assets appear

On the liability side, the current liabilities consisting of debts payable within one year will be stated at the top of the list where their total can be most readily compared with the current assets opposite Fixed liabilities will follow and the residual equity of the owners, sometimes called the net worth, will come at the end

**Balance sheet terms** The reader must be prepared to abandon his usual use of terms and acquire that of the accountant when reading the latter's handiwork Most important and probably most confusing to the non-accountant is the peculiar usage of the term "reserves," which covers three categories of items, whose nature should be familiar [5]

1 *Valuation reserves* Instead of reducing the amount of certain assets before carrying them to the balance sheet, the accountant prefers to show their face value or original cost, as the case may be, and then the amount of deduction for loss of value in a separate account Thus, the Accounts Receivable owing from customers may appear in the balance sheet for their full face amount with a Reserve for Bad Debts stated as a deduction Only when specific accounts have become almost certainly uncollectible will they be removed from the former total and an equivalent reduction be made in the offsetting valuation reserve Likewise certain fixed assets have to be written off over their useful life A brick building might be depreciated at the rate of 2 per cent a year (50-year life) or machinery at a 10 per cent rate (10-year life) These deductions are accumulated and shown in a deduction account called Reserve for Depreciation For the public, the balance sheet would undoubtedly be clearer if the word Reserve in this class of items were changed to Allowance and the preceding valuation

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[5] For a fuller discussion of this and other similar matters, a further treatment may be found in Guthmann, H G, *Analysis of Financial Statements* (New York Prentice-Hall, Inc, 3rd ed, 1942)

reserves spoken of as Allowance for Bad Debts and Allowance for Depreciation The net balances after the subtraction of these deductions are spoken of as the net or book values of the respective assets

2 *Liability reserves* The item Reserve for Federal Income Taxes will frequently be found among the current liabilities The amount is the liability for such taxes and the title would be clearer for many if stated as Estimated Income Tax Liability or Accrued Income Taxes Similarly, reserve items may appear that are clearly long term liabilities Such a liability for pension claims may appear as "Reserve for Pensions" If actual sums have been set aside and invested, these investments will appear among the assets as Pension Fund The accountant uses the word "Fund" where popular usage would often use the word "Reserve"

3 *Surplus reserves* Finally, the accountant may have transferred some of the Surplus account to a third type of reserve account Such reserves as the Reserve for Expansion, Reserve for Working Capital, or Sinking Fund Reserve appearing on the liability side are merely so much surplus under special headings and are sometimes spoken of as appropriated surplus (Monies actually set aside to retire a bond issue would be called a Sinking Fund and appear among the assets) Actually no such accounts are necessary to retain earnings in the business in the form of Surplus, but some concerns seem to find satisfaction in plainly earmarking their reasons for retention Occasionally, a bond indenture specifically requires the creation of a Sinking Fund Reserve as a part of a plan to retain earnings by an amount equal to the sums that are planned for bond retirement In this manner, the owners' equity is expected to increase as the bonded debt is reduced through retained earnings that are to be shown as a Reserve rather than as Surplus.

Again, a Reserve for Contingencies may appear when the board of directors looks forward to future losses and wishes to have surplus that will absorb that loss Sometimes a specific type of expected *future* loss will appear in the name of this type of reserve, as in the case of a Reserve for Inventory Price Decline Both types of reserve are surplus *as of the date of the balance sheet* and might be included in the calculation of the stockholders' equity Probably most analysts will prefer to make a distinction between the two types of surplus reserve and include the former in stating the book value of the stockholder's investment but follow the conservative course of excluding the latter The argument for this conservatism would be that the business is not to be liquidated as of the balance sheet date but is a going concern If the directors' estimate of future loss is accurate then so much surplus will disappear and should be excluded presently under the going-concern principle In order to avoid the possibility of overlooking excessive pessimism by directors and of making unfair intercompany comparisons where policies may differ, the amount of all contingency reserves should be noted in the analysis and receive suitable comment for its potential addition to the figure for equity investment if it is not actually added into that item

The presence of a relatively large item representing "goodwill" or other intangibles among the assets requires special treatment by the analyst Pending further discussion, it is recommended that such items be eliminated entirely from the balance sheet and that an equal amount be deducted from surplus This treatment should not be taken to imply that goodwill never has a value, for, as will be seen, it may have a real value The purpose in eliminating intangibles from the balance sheet is purely to facilitate the statistical comparisons that are to be suggested

Deferred and prepaid items also require interpretation In the customary operation of corporate affairs, it becomes necessary from time to time to pay in advance for certain services Frequently, insurance is paid for several years in advance Work may be undertaken in the opening of new markets and the expenses incurred carried as an asset until sales begin In other cases, extraordinary losses may be set up as a deferred, or suspense, account and gradually charged against earnings This latter type of item may be treated as an intangible asset, whereas the former type, consisting of prepaid expenses, is usually relatively small and may be treated as a current asset, although in the conventional balance sheet it is generally shown as a special division of the assets

**Income account defined.** The income account, as contrasted with the balance sheet, shows the earnings results of a corporation over a period of time, usually a year It explains in more or less detail the income and expenses that have caused the changes in the proprietorship, or surplus, account in the period elapsing between two consecutive balance sheets Practice varies in regard to the form in which the income account is set up, but the following example illustrates in a general way the customary method of presenting this information for manufacturing concerns The following is a simple and greatly condensed income account, covering the operations of our assumed corporation for the year ending December 31, 1950. (See page 190 for balance sheet )

INCOME ACCOUNT YEAR ENDED DECEMBER 31, 1950

| | |
|---|---|
| Net Sales | $1,000,000 |
| Cost of Goods Sold and Operating Expenses | 800,000 |
| Net Operating Income | $ 200,000 |
| Income from Other Sources | 10,000 |
| Total Income | $ 210,000 |
| Fixed Charges | 20,000 |
| Income Taxes | 20,000 |
| Net Profit | $ 170,000 |
| Dividends on Stock | 100,000 |
| Net Profit Left in Business | $ 70,000 |

The example illustrates the main groupings necessary to a proper analysis of the financial affairs of the corporation The first item that appears is Net Sales, which may be labeled Total Revenues, Sales Billed, or Sales, but should include only the gross amounts received from the normal operations of the business, after returns and allowances have been deducted In a financial business, such as a commercial bank, the gross operating revenues would consist of Interest Income and Service Charges A cost of Goods Sold will be lacking where services rather than goods are sold Operating Expenses includes expenditures other than those for goods or their production, such as selling and administrative, but not any distribution to investors or taxes based on profits Among the more common operating expenses are salesmen's salaries and commissions, advertising, administrative salaries, heat and light, repairs or maintenance of buildings and equipment, depreciation; and taxes other than income and profits taxes The amount left after the payment of such expenses may be called the Net Operating Income. To this is generally added any income not derived from the main operations of the business Such nonoperating income may include interest received from outside investments, rentals on leased properties, and the like If there are other expenses incurred that are not in the nature of financial or operating expenses, they may be deducted at this point Among such charges may be included the cost of maintaining leased property or other expenses incident to the ownership of nonoperating property In any event Total Income, or Gross Income, should represent the amount available for bond interest, other financial charges, and income taxes The amount left after these deductions are made is available for dividends on stocks and for surplus

Sometimes a business will have various irregular or nonrecurring items of gain or loss that will typically appear near the end of this statement. They may be referred to as profit and loss adjustments or as surplus changes. No general rule can be laid down for their treatment in investment work. Their handling should be determined by the use that is to be made of the results. Where the purpose is to judge the near term earnings possibilities, a complete elimination may be made. If, however, a long-run view of past earnings is sought in order to judge the average situation for a number of years, most of these irregular items may be included except where their recurrence is improbable or they represent adjustments unrelated to earning power.

**Relation of income account to balance sheet.** All income and all expenses that have an effect, one way or another, on the proprietorship equity of the company are summarized in the income account. In the preceding example the profit and loss balance of $70,000 represents the net change made in the surplus account of the corporation between the two balance sheet periods. This fact may be illustrated by reference to the first of the previous balance sheets assumed for this corporation, appearing on page 184, in which profit and loss surplus was carried at $900,000 for the year ended December 31, 1949. It is known from the income account just shown that the 1950 balance sheet will have to show a $70,000 increase in proprietorship equity, which should appear as an increase in the profit and loss surplus account.[6] It is in fact conceivable that the balance sheet of Corporation A, on December 31, 1950, might appear as follows:

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Cash | $ 320,000 | Accounts Payable | $ 400,000 |
| Accounts Receivable | 500,000 | Notes Payable | 200,000 |
| Inventories | 700,000 | Bonds | 500,000 |
| Land and Buildings | 1,025,000 | Capital Stock | 1,000,000 |
| Machinery and Equipment | 525,000 | Surplus | 970,000 |
| | $3,070,000 | | $3,070,000 |

In other words, one must look to the income account for an explanation of the changes that take place in surplus between two balance sheet dates. For Corporation A, if no income account had been available, but merely the balance sheets as on December 31, 1949 and 1950, respectively, and had it been known that the company paid dividends of $100,000, net earnings for the period could have been determined by working backward By subtracting the 1949 surplus from that for 1950, a gain of $70,000 is shown Adding $100,000 in dividends to this, one arrives at total net earnings of $170,000 For corporations that fail to publish income accounts, but publish annual balance sheets, it is possible to estimate earnings in this way

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[6] This statement assumes that no capital adjustments were made during the year, such as the writing up or down of fixed assets or the distribution of stock dividends. Such adjustments have an effect on proprietorship equity and will usually appear as "surplus changes" in a special division at the end of the income account for the period.

**Liquidity and solvency.** The general purpose of the balance sheet, in addition to showing how the business has invested its money in various forms of assets or property and the sources of those funds, is to indicate probable liquidity and solvency Liquidity refers to the convertibility of assets into cash and solvency to the ability of a business to meet its creditor obligations as they mature The income statement, on the other hand, shows the past earning power Since earnings as well as existing assets are also a possible source of funds to pay debt, the two statements must both be studied to get the complete story of solvency

Since this chapter is only intended to cover general principles applicable to all fields, discussion of the ratios and techniques that vary with the different kinds of business would be inappropriate What are the common concerns in the study of the balance sheet? Solvency for both the short and the long run is such a general concern For the short run, solvency is judged chiefly by examining the current assets and the current liabilities in their relation to each other. The liquidity as well as the amount of the current assets will be important in determining their usefulness in paying debts. In a manufacturing or a mercantile concern this approach would mean a study of the ratio of current assets to current debt, that is, the current ratio, the proportions of the different current assets to determine relative liquidity, and a check of the probable age of receivables and inventories by comparison with sales The standards of comparison would consist of the similar relationships for the company over the past and the same points as they are found in similar companies

Even in a field so dissimilar as that of finance and so unique as commercial banking, these general ideas of liquidity and solvency will be applicable Because the bulk of both liabilities and assets of commercial banks are current, one does not hear of a current ratio being calculated, but the same concept of ability to convert assets into cash to meet demands of creditors is found The proportions of the various assets—cash, loans, investments—are examined as they bear on the ability of the bank to meet deposit liabilities in the event of withdrawals

Long-term solvency is partly a matter of maintaining a sound current position and partly one of the proportions in which funds are supplied by permanent investors The latter is a matter of capital structure proportions, that is the percentage relations of long-term debt, preferred stock, and common stock equity or investment For the illustrative corporation used before the capital structure consisted of $500,000 of 4 per cent bonds, a common stock equity of $1,970,000 (Capital Stock plus Surplus) at the end of 1950 The proportion was 20 per cent debt to 80 per cent equity

**Trading on equity.** A corporation is said to be "trading on equity" whenever the investment or equity of the common stockholders is used as a credit base for borrowing additional funds or obtaining preferred stock money [7] Current borrowing may be important If it is, a percentage analysis of the liability side can be made to determine the relative importance of all the added sources of funds that add to the possible earnings of the common stockholder Because current debt waxes and wanes seasonally, which makes it hard to measure from annual balance sheets, and often represents little more than nominal bills in the course of payment rather than formal borrowing, the study of trading on equity for large corporations is ordinarily confined to the capital structure. Capital structure includes the fixed or long-term sources of funds, that is, the long-term debt and the ownership funds

An illustration of trading on equity may be had from the balance sheet of American Airlines, Inc at the end of 1946 On that date the company had borrowed $40,000,000 at 3 per cent in the form of debenture bonds due in 1966, and obtained $40,000,000 by selling 3½ per cent cumulative preferred stock The common stockholders' equity totalled $25,019,405 (Capital Stock $6,462,835, Paid-in Surplus $6,159,654, Earned Surplus $12,396,916) These three contributions were 38, 38, and 24 per cent respectively The usual method of studying the capital structure proportions is (1) to compare them with those of the industry, (2) to study the past earning power of the corporation itself in relation to the capital structure, and (3) to ask in the light of the record whether the structure seems safe and satisfactory

The two aspects of trading on equity are profitability and risk In the case of American Airlines, if the company can earn more than the 3 per cent on the funds contributed by the bondholders and the 3½ per cent on that of the preferred stockholders, surplus earnings will accrue to the common stock In contrast, if the company had financed the additions by a sale of common stock, the proportionate increase in stock would have tended to leave the old stock much as it was before in the matter of earnings (The question of comparative earning power of old and new capital and the price of the new shares is discussed below ) Where trading on equity is used, the additional property may fail to earn the stipulated rate of return on the prior securities, in which case the results are unprofitable and the drain must come from earnings on property supplied by the common stock All common stock financing means that the new security holders share any losses as well as possible profits along with the old common stock The situation may be illustrated by comparing the results for the American Airlines under varying assumed earnings conditions

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[7] Credit for this phrase belongs to W H Lyon See Lyon, W H, *Capitalization* (Boston Houghton Mifflin Co, 1912), Chapter II

| *Capital Structure* | *Poor Earnings* | *Break-even Earnings* | *Good Earnings* |
|---|---|---|---|
| All common stock structure, total investment—$105,000,000 | | | |
| Rate earned — % | 0 00 | 3 25 | 10 00 |
| Total earnings . | 0 | $3,412,500 | $10,500,000 |
| Using actual structure | | | |
| Required for interest and preferred dividends | $2,600,000 | $2,600,000 | $ 2,600,000 |
| Balance for common | *2,600,000 (d)* | 812,500 | 7,900,000 |
| Return on common equity — % | *10 4 (d)* | 3 25 | 31 6 |
| Change in return from trading on equity — % points | *—10 4 (d)* | 0 | +21 6 |

(*d*) = deficit

The foregoing suggests why "trading on equity" is sometimes called "leverage" The common stockholders' investment has been used as a base to obtain the use of borrowed dollars, and the more of such dollars that are put to work for the common stock the greater the potentialities for high profit Thus, if one dollar of funds is borrowed for every dollar of equity money, there are two dollars at work Leverage is measured by the relation of the number of extra dollars supplied by debt or preferred stock in relation to the dollars supplied by the common stockholders In American Airlines the leverage was substantially 3 20, the bonds and preferred stock supplying $80 million as compared with the common stock equity of $25 million. The result was that the rate of return on the common stockholders' investment was boosted by 3 2 percentage points whenever earnings were above the average, or break-even, rate paid for these added funds It was depressed by the same number of points when earnings fell below that rate Thus, in the good year when earnings mounted to 10 per cent on total investment, or 6 75 percentage points above the break-even rate of 3 25 per cent, the common stock equity return rose from 3 25 to 31 6 per cent (10 0 per cent plus 3 2 times the rise of 6 75 points) In the poor year the common stock return dropped from 3 25 to a deficit rate of 10 4 (0 00 minus 3 2 times the fall of 3 25 points )

The profitability of trading on equity lies in the possibility of a higher rate of return than that paid on the prior securities The risk lies partly in the possibility of earning less and so having to dip into what would otherwise be common stock earnings, and partly in the hazard of insolvency, should there be any failure to pay interest, principal, or fixed sinking fund The insolvency hazard means that the whole principal of the stockholders, not merely a sliver of income, is placed in jeopardy This risk is apparently absent in the case of preferred stock, but if preferred dividends go unpaid long enough, the claim may grow so onerous as to lead to recapitalization that could wipe out a large share of the common stockholders' rights [8] In planning new financing the common stockholders must weigh these risks against the hope of profitability

The earnings record of American Airlines immediately before and after this financing reveals why the company was able to sell a heavy volume of senior securities and how the hazards of trading on equity are very real for even a favored growth company that is the largest unit in its field As late as 1935 and 1937 the company recorded losses, and in 1936 did little more than break even Subsequently, earnings were satisfactory and growth went on at a rapid pace Dividends were initiated in 1940 During World War II planes were crowded to the limit and new equipment could not be had because of military needs This high volume of operations, plus specially favorable tax treatment, built up the common stock equity rapidly and allowed the accumulation of unusual cash resources for postwar replacements and expansion

At the end of the war the amounts needed to purchase planes caused an attack of financial growing pains Debt and preferred stock were created on the large scale shown above The industry had a good earnings record in the immediately preceding years, growth prospects were excellent, and the Federal Government had shown a willingness to favor a business essential to the national defense by mail subsidies and special tax favors during the war period.

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[8] For examples of recapitalization, see Guthmann, H G , and Dougall, H E., *Corporate Financial Policy*, pp 565–568 (New York Prentice-Hall, Inc , 2nd ed , 1948)

Hardly had this expansion and financing been completed when rising costs and lower plane utilization caused earnings to disappear and common stock dividends to be omitted. The decline in net was cushioned in 1946 and 1947 by tax credits granted to companies that paid excess profits taxes in the war years, but had losses immediately thereafter. Since our purpose is merely to illustrate some of the hazards of trading on equity, only the following significant figures, sufficient to enable the reader to visualize the magnitude of the Company's troubles in 1946–1948, are presented. Earning power returned in 1949.

AMERICAN AIRLINES, INC. EARNINGS 1945–1948

(Thousands)

| | *Operating Revenues* | *Total Income** | *Net Income†* |
|---|---|---|---|
| 1945 | $47,416 | $8,361 | $4,399 |
| 1946 | 68,083 | *276d* | *376d* |
| 1947 | 81,731 | *4,096d* | *2,963d* |
| 1948 | 89,286 | *1,500d* | *2,894d* |

* Before interest, income taxes, and special charges.
† For preferred and common stock.
Source: *Moody's Manual of Investments, Industrials*, 1949.

**Dilution of common stock value.** In the foregoing the tacit assumption was made that the corporation had the alternative of selling common stock instead of bonds and preferred stock if it chose. That option may not exist at the time the money is needed. Or, what is more frequently the case for large well-known corporations, common stock may be salable only at prices so low as to bring down the value of already outstanding shares. Reduced value from this cause is called "dilution." Thus, in the case of American Airlines, the book value per share at the time of financing was $4.05 (as of previous year-end). If it had been necessary to sell new shares at less than this figure, say $3.20 per share, some 25,000,000 shares would have had to be issued to obtain the needed $80,000,000, with the result that the per share book value would have been reduced from $4.05 to $3.34, or 14 per cent, and would have meant quintupling the number of shares outstanding. At the time, the market price of the stock was much higher than the book value, so that the latter might have been enhanced rather than diluted. The amount of funds needed, however, was so large, and the consequent amount of stock that would have had to be sold so considerable, that it would have raised a question as to whether it could have been sold readily, at least without danger of depressing the market very greatly.

Because of the greater importance of earnings than assets, that factor rather than book value is ordinarily studied to determine the potential dilution Sometimes there may be none If, in the case just cited, the company had been earning 10 per cent on its book value, expected to earn the same rate on the new funds, and could sell new stock at book value, then no dilution would be necessary The matter is one of comparative earning power of the funds contributed for the new shares and that of the equity behind the old shares In this respect it is important to study the long-run earning power of the old stockholders' investment rather than the current earnings alone, which may be temporarily high The lower the price paid for the new shares the harder it becomes to avoid dilution

In periods when institutional lenders are willing to buy bonds at very low yields but common stockholders are demanding generous dividends and earning power, the urge to trade on equity is strong No objection can be raised so long as prior securities are kept within reasonable limits relative to prospective earnings

Fear of dilution probably is one of the reasons why investors in common stock usually prefer to see growth from retained earnings rather than by sale of new stock Where a large need for funds arises, senior financing may be used to anticipate subsequent retained earnings In any case, the value of the common stock can be greatly affected by the judicious or injudicious timing of sales of new stock because of the great variations in market price The convertible bond or preferred stock may offer a device for selling common stock by indirection at a price that is higher than the going market price at the time of financing If the conversion price (that is, the amount of bonds or preferred that must be turned in to obtain one share of common) is sufficiently high, subsequent conversion may enhance rather than dilute book value and long-run earning power per share American Airlines made its preferred stock referred to above convertible into common at 21, meaning that that much preferred stock par value (substantially the price paid for it) would have to be turned in to the company to acquire one share of common stock Comparison of this figure with the book value of $4 05 indicates conversion would increase rather than dilute book value Whether earning power dilution would exist at that figure would depend upon prospective earning power but in the circumstances at the time it seemed unlikely[9]

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[9] For a further discussion of this problem, see Guthmann, H G, "Measuring the

**Earnings and the prior securities.** This discussion of the capital securities leads naturally to the study of the income account for the purposes of the investor Where his interest is in senior securities, that is bonds and preferred stocks, attention centers on the margin of safety for his stipulated income payments and any return of principal, as through sinking fund The most commonly used measure is the relation of charges to available income, or the coverage factor This measure known as "times interest earned," is obtained by dividing the amount available for all interest charges by the amount of interest upon the given issue and underlying or equally secured issues

The following example illustrates this method and also shows how a junior mortgage bond may, during prosperous years, have a high coverage, but during poor years suffer more severely than do senior mortgage bonds. Assume the following data in regard to a corporation whose bonds we are analyzing

DATA FOR BOND ANALYSIS

| *Item* | | *Normal Year* | *Poor Year* |
|---|---|---|---|
| A | Gross Revenues | $1,000,000 | $900,000 |
| B | Operating Expenses | 600,000 | 540,000 |
| C | Income from Operations | $ 400,000 | $360,000 |
| D | Interest on First Mortgage | 200,000 | 200,000 |
| E | | $ 200,000 | $160,000 |
| F | Interest on Second Mortgage | 100,000 | 100,000 |
| G | | $ 100,000 | $ 60,000 |
| H | Interest on Third Mortgage | 50,000 | 50,000 |
| I | | $ 50,000 | $ 10,000 |

Applying the rule of dividing by the total available earnings the interest charges on the given issue plus the underlying issues, the following "coverage" or "times interest earned" figures are obtained

TIMES INTEREST EARNED OVER ALL COVERAGE

| | *Normal Year* | *Poor Year* |
|---|---|---|
| First Mortgage (C — D) | 2 00 | 1 80 |
| Second Mortgage (C — *D* + *F*) | 1 33 | 1 20 |
| Third Mortgage (C — *D* + *F* + *H*) | 1 14 | 1 03 |

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Dilution Effect of Convertible Securities," *Journal of Business of the University of Chicago,* January, 1938, pp 44–50

The times interest earned figures readily show how large a margin exists over the charges of any given issue They also make it easier to visualize the relative decline by which that margin may be wiped out Thus in a normal year the coverage for the first mortgage is sufficient to permit a decline of one half in the available earnings before the margin is completely eliminated As far as the third mortgage is concerned, however, with an over-all coverage of but 1 14 in the normal year, the elimination of the 14 cents margin out of each $1 14 will wipe out the margin The earnings for the poor year show the effect of a 10 per cent decline in earnings and indicate how much more rapidly the junior issue sinks to the danger point of one times earned A drop of 12 per cent would have eliminated all margin for the third mortgage but would have left the first mortgage with a coverage of 1 76[10]

These figures also illustrate why the computation of coverage for each individual issue on the basis of the balance available for it alone is unsatisfactory Inspection of the income figures shows that if this method had been used, each of the three mortgages would have shown exactly the same coverage, 2 00 times earned, in the normal year For purposes of analysis, the over-all coverage for each issue is preferable because it offers a measure indicating what variation in the net income available for all interest charges will eliminate the margin of safety for the given issue

From the point of view of the corporation and the common stockholders the over-all fixed interest coverage is the significant measure of general credit risk. Chief emphasis is laid upon the most recent coverage figures for the reason that the latest years are closest to the future, which is the period of interest Some prefer to use an average coverage figure but an average has more validity than a single year's figure only when there are grounds for believing the average is more typical of probable future conditions When a company has been growing rapidly or has undergone a major change in capital structure, the last year's figures may be closer to conditions of the future than an average If capital structure alone has changed considerably and property and earnings are believed to be substantially unchanged, the investor may compute the coverage of present charges on the basis of the average of past earnings

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[10] Another method of measuring interest coverage, called "factor of safety," is suggested by Gerstenberg, C W, in *Financial Organization and Management* (New York Prentice Hall, Inc, 2d rev ed, 1939), p 191 The factor of safety is the ratio of the amount remaining after payment of the interest on a given issue to the amount of income available for that and prior interest charges The measure has an advantage over the conventional "times earned' figure since it tells the user directly what percentage of net income shrinkage is possible before the given charge is endangered Thus, where coverage is 2 00, the margin of safety is 50 per cent and income could fall by one half and still leave the charge fully earned With coverage of 1 14, the margin of safety would be 12 per cent When coverage falls below one, the margin of safety ceases to exist

**Preferred dividend coverage.** The position of the preferred dividend is studied very much as though it were a junior bond, if it is preceded by other securities So preferred dividend coverage is ordinarily calculated on the basis of the coverage of the combined interest and preferred dividends Were this procedure not followed but were coverage calculated by dividing the net income after interest by the preferred charges alone, the result might be a coverage figure that would appear to make the preferred stock safer than a large senior bond issue For example, if a corporation had a $40,000,000 debt paying 4 per cent and a 5 per cent $5,000,000 preferred stock issue The coverage might appear as follows if the less desirable procedure of calculating the coverage independently for each issue were used

| | *Income Data* | *Independent Coverage* |
|---|---|---|
| Net Income | $4,800,000 | |
| Interest Charges | 1,600,000 | 3 00 |
| Balance for preferred | $3,200,000 | |
| Preferred Dividends | 250,000 | 12 80 |
| Balance for Common | $2,950,000 | |

The independent "times preferred dividend earned" figure of 12 80 for the preferred stock might lead the unwary to regard the issue as very superior overlooking its essential subordination to a bond issue with a coverage of but 3 00 times The combined coverage for the two issues, amounting to 2 59 ($4,800,000 — $1,850,000) gives a correct picture of the relative standing of the preferred

**Coverage and income taxes.** With the rise of corporate income tax rates the handling of that item has become very important. Some analysts point out that income taxes are computed on the basis of net income *after* interest charges but before any dividends Consequently, they argue the only correct coverage for interest is that calculated on the basis of income *before* income taxes Some investment services offer the "times interest earned" calculation on the basis of income both *before* and *after* income taxes Because preferred dividends have no priority over taxes, the coverage figure is figured on the basis of net income *after* income taxes.

In spite of the logic for figuring interest coverage on the basis of income *before* income taxes, many prefer the *after* taxes basis. The arguments used would be (1) that of "conservatism," since the latter gives a lower figure, and (2) that the coverage figure should be on a "comparable" basis with that for the preferred stock [11]

**Paying unearned charges.** Charges on senior obligations can be paid even in years in which current earnings are insufficient to cover those charges if free cash is available In some fields free cash is customarily so small as to make the corporation dependent upon the flow of cash from current operations Public utilities with their relatively small current assets are often in this position Railroads were typically in this position until earnings in World War II provided something above bare interest on debt, which some roads decided to use to build up a stronger current position that would carry them through a period of depressed earnings, such as had bankrupted many of them during the 1930's In contrast, the investment companies often have practically all of their assets in marketable securities, so that in the absence of current earnings they would have the means to pay interest in spite of a temporary deficiency in earnings

Preferred dividends are but a contingent charge and so may be discontinued without causing insolvency Directors may, however, continue dividend payments in the absence of current earnings if (1) previously accumulated surplus makes that legally permissable, (2) no covenants made in agreements with creditors to maintain credit strength are violated, and (3) the directors believe the current position is strong enough to warrant a disbursement [12]

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[11] Most investors will probably be content to use the conventional coverage calculations as outlined For an ideal approach, two improvements are desirable, first, the adoption of "margin of safety" referred to in the preceding footnote, and second, the use of a measure that recognizes that income taxes share in the income available for dividends rather than precede that item This calculation would put preferred dividend coverage on a genuinely comparable basis with the logical coverage figure for bond interest calculated on net *before* taxes Where income taxes are a flat rate the coverage of preferred dividends by this approach could be expressed by the formula

$$\text{Coverage of P} = N - (I + P + \frac{P \times t}{1 - t})$$

in which N equals net income before income taxes, I is interest, P is preferred dividends, and t the tax rate This improved formula recognizes that, in order to cover preferred dividends, the corporation must earn enough *before* taxes to cover the two charges plus an amount equal to the income taxes if the preferred dividends are earned once

[12] For example, American Airlines continued to pay the full preferred dividend in 1947 and 1948 although there was a substantial deficit rather than a profit

Cash may be provided by operations even in the absence of net earnings When a business has sales enough to cover all costs and expenses including depreciation, an amount equal to the depreciation expense becomes available for the replacement of depreciated assets or for other corporate purposes For that reason, depreciation is sometimes spoken of as a source of funds even though, strictly speaking, actual money never arises from the mere write-down of an asset but is derived rather from the customer's sales dollar In effect, however, a corporation that does not replace depreciated assets in a given year is converting fixed assets into cash if sales revenue is sufficient to cover the depreciation expense Consequently when doubt arises as to the coverage of fixed charges, the sum of net income *plus depreciation expense* is checked in relation to the amount needed for the charges

At such a time debt maturities or fixed sinking fund may also constitute a problem and so may be added to the fixed charges to see if the company will get by without a drain on working capital Thus, it might be reported that a certain railroad was barely earning its fixed charges but that depreciation allowances were more than sufficient to care for serial maturities of its equipment obligations plus any sinking fund requirements Depreciation is a relatively important expense to utilities, railroads, and real estate concerns, and unimportant for many merchandising concerns In the real estate field it is even conventional to compute coverage on the basis of net income before depreciation and treat interest and sinking fund as the total charges

**Common stock position.** The use of the coverage or "times earned" analysis might appear an approach to the common stock position, but the common is entitled to all of any balance of earnings and the dividend itself fluctuates from time to time with the earnings so that the figure would have little meaning Study is directed rather to the pattern of past earnings and dividend policy in order to judge the most probable pattern the two are likely to set in the future. In some fields, such as the public utilities and some of the food industries, the record of the past is most useful for the prediction of the future, others, such as the field of aircraft manufacture, design and technology, and with it the fortunes of the individual competing companies, change so rapidly as to make the past record an uncertain guide Investment analysis has the greatest value in the first type of situation and must be used with caution in the latter Investors seeking regular income favor the former type of situation, speculators seeking rapid change in price and capital gains, favor the latter

Once the pattern of earnings and dividends has been surveyed for a common stock, all else becomes a matter of refined detective work aimed at the twofold objective of defining more exactly (1) the amount of income and (2) the risk of realization for the anticipated income

The amount of past income might be thought to be clearly and exactly stated in the financial statements of the past Actually, differences of judgment and policy can have major effect upon the amounts reported Perhaps the most important example in recent years has been the contingency type of reserve discussed earlier in this chapter Depreciation and inventory valuation policies are other influences

Differences in depreciation policy can be examined by comparing the annual allowances to the assets being depreciated Previous allowances and the practice of similar companies provide a comparative standard The total accumulated allowances shown in the balance sheet as the Reserve for Depreciation can be compared to the gross property Occasionally the annual charges are studied in relation to the gross revenues, as in the utility field, and sometimes the combined costs of depreciation and maintenance are studied in that manner, as in the railroad industry Sometimes, as in commercial banking, fixed asset depreciation is a relatively unimportant expense, but another valuation cost such as the allowance for bad debt losses on loans becomes a crucial item in distinguishing policy and appraising the reported earnings In other fields the chief asset valuation problem lies in the inventory, as in some merchandising and manufacturing lines

While the investor would like to achieve a feeling of certainty with regard to the earnings, he is compelled to recognize at least that an area of uncertainty exists with respect to such costs as those enumerated Rather than attempting to revise the reported earnings to their "true" figure, he must be satisfied with figures that have been adjusted to a reasonably comparable basis with those of other companies and try to decide the size of the area of uncertainty.

After examining the amount of earnings, the estimate of risk will take different forms depending upon the industry and the investigator Certain common measures of risk are (1) the margins of revenues or sales that remain for earnings (a) to total invested capital, and (b) to the common stockholder, (2) the rates of return earned upon (a) invested capital, and (b) the common stock equity, and (3) the degree of net earnings stability These might be thought of as the qualitative elements of the investment as distinct from the quantity of income as reflected in "times earned" and per share earnings figures Qualitative factors with respect to the solvency aspect of risk were discussed in connection with the balance sheet

**Operating ratios and margin of earnings.** To measure operating performance, attention is directed to the operating ratio (ratio of operating costs and expenses, including any cost of goods sold, to sales or revenues) Financial expenses, such as interest, and any income taxes are excluded The complementary figure, the margin of net earnings, derived by subtracting the operating ratio from 100 per cent, has more direct utility for the investor because it concentrates attention upon the balance that is available for the investor group and the government's income taxes The greater the net margin per cent, the more able the business is to meet rising costs or shrinking sales as compared with competitors Other things being equal, the company with the wider margin should enjoy greater net income stability A merchant with a 4 per cent net margin will suffer a loss of only 25 per cent in dollar earnings if all factors remain constant while costs advance one per cent of sales Were the net margin only 3 per cent, the same rise in costs would cut earnings by 33 per cent

A natural extension of this approach is to make a percentage analysis of the various costs in their relation to sales whenever sufficient details are available, in order to discover the basis for differences in profit performance Sometimes two apparently similar businesses are discovered to have essential differences that affect these percentages For example, of two mail order houses or two grocery chains, one might engage in manufacturing or food processing and the other confine itself strictly to trade The former, with its additional investment in plant facilities, will need to have a larger per cent profit margin to achieve the same rate of return on invested capital Again, if one automobile manufacturer is thoroughly integrated, not only making his own parts but even engaging in steel production, his net margin will need to be larger than for one who only assembles parts made by others

**Return on invested capital** The general measure for rate of return is to compare the earnings with the capital invested This figure is usually found by defining earnings as the net income, after *all* taxes, that is available for the payment of interest on long-term debt and for dividends to stockholders, the invested capital is defined as the sum of the long-term debt, usually bonds, plus the preferred stock and common stock equity The return earned for the common stock upon its equity is also studied Comparison of these two figures will indicate the influence of trading on equity Some like to pursue the matter further by comparing the operating net earnings with the investment in operating assets and any nonoperating income, such as interest and dividends on securities owned, with nonoperating assets

In order to facilitate intercompany comparisons, the usual practice is to eliminate any intangible assets, such as goodwill and patents, from the balance sheet, subtracting their amount from the common stockholders' book equity before making the preceding calculations Some prefer to use the expression "net tangible assets for the common stock" instead of "common stock equity" when using this adjusted figure So few corporations show any intangible assets nowadays that the two are usually the same amount The resulting invested capital figure might be spoken of as the "tangible invested capital"

Rate of return calculated in this manner should be used with caution, if at all, as a measure of efficiency The figure used for invested capital is a book value and determined by the methods of asset valuation employed Because of the great changes in the general price level that occur over periods of time, the fixed assets will appear at vastly different figures in different cases although representing the same physical capacity Differences in the age of the fixed assets will also result in different accumulations of depreciation allowances so that net book value will differ even though it represents the same physical capacity Such considerations must be kept in mind in trying to judge the significance of the rate of return earned on book investment[13]

**Stability of net income** The straight dollar record of earnings as they are reported in the income account would appear a sufficient picture of income for judging past stability Graphic presentation of these figures is particularly effective and is often more useful than formal statistical measures of variation[14] When, however, important changes in the size of the business have occurred during the period either from internal growth or through mergers, these same dollar figures may present a mixture of the influence of changing size and fluctuating business conditions The separate influence of the latter is sought where possible For this purpose, the rates of return on invested capital and common stock equity are useful as is also the relation of net income to gross sales

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[13] Leland R Robinson in his study of earnings over the period 1918–1947 entitled "The Decline in Corporate Earning Power" states that the ratio of net earnings (including interest) to gross income (sales plus miscellaneous income) is the better measure of business efficiency He points out that sales move with the price level whereas book investment does not *Commercial and Financial Chronicle,* December 2, 1948

[14] For a graphic method of studying earnings stability relative to fluctuations of industrial production, useful for checking cyclical stability and growth, see Morrison, Paul L, "Application of 'Scatter Diagrams' to Security Analysis," *Investment Counsel Annual* I 58 (1938)

Because the investor can only spend actual cash received, the stability of the dividends is fully as important to him as that of earnings, at least if he is dependent upon his investment income for living expenses Dividends depend upon and tend to follow earnings but dividend policy is subject to considerably more control than earnings Consequently the record of such payments is especially useful in providing a clue to the temperament of the board of directors and their probable efforts to stabilize payments in the future Changes in financial condition may change board attitudes A corporation with a heavy load of debt is likely to be, and should be, more conservative in the matter of dividends than one that is free of debt A long record of unbroken dividends is regarded with favor by some, although such a policy may result in selecting companies with an honorable past rather than a brilliant future

**Growth stocks.** Growth in common stock earnings per share is valuable where market appreciation, as well as dividends, is sought The record of earnings and book value is useful evidence on this score Growth, if it is more than mere temporary fluctuation, is very generally based upon the compound-interest principle applied to retained earnings Consequently the policy of earnings retention and the rate of return earned on common equity are two significant factors for judging this growth influence If a corporation can earn only 4 or 5 per cent on its stockholders' investment, as has been true in the railroad field, a generous retention policy is likely to add but slowly to earnings A company, however, that is able to earn in excess of 10 per cent may show rapid growth of both book value and earnings per share even when it pays out a high proportion of earnings as dividends

Study of each individual stock is necessary for sound conclusions The facts behind the figures are all-important A railroad earning only a low return on its book investment might add markedly to stock earnings by purchasing its own bonds at great discounts with retained earnings Some roads bought back their bonds during World War II on as high as a 10 per cent yield basis Or, funds may be put into new property likely to be much more profitable than existing assets Diesel locomotives, for example, might offer savings that would constitute a very high return On the other hand, a manufacturing company earning a very high return might for a period devote most of its retained earnings to paying off some 3 per cent bonds at par Reinvested earnings used for that purpose will add but nominally to common stock earnings, especially when allowance is made for the federal income taxes upon the interest saved which was previously a deductible expense for tax purposes Thus, $100 devoted to retiring 3 per cent bonds saves but $3 00, which, when added to taxable net income, might have to bear a 40 per cent income tax The net addition to the stockholders' income would be but $1 80 or 1 8 per cent on the reinvested earnings The reward of the stockholder for such retained earnings lies in the reduction in risk through the removal of senior obligations rather than in increased earnings Ultimately the corporation may pursue a more generous dividend policy once the job of debt retirement has been completed

Increased earnings resulting from a rise in the general price level should be distinguished from actual expansion of physical volume They represent adjustment to inflation rather than true growth During such a period profits may appear high in relation to book investment for industrial companies, but these accounting profits will be largely absorbed by the increased dollar investment in current assets needed to carry on even the same physical volume of business Often the reported retained earnings are inadequate to finance the inflation of current assets Once paid for, however, the expanded dollar investment should tend to yield earnings and dividends commensurate with the new book investment and thereby permit the common stock investor to meet the increased cost of living in a manner that is not possible with fixed income investments

Conversely, during deflationary periods industrials suffer accounting losses as the result of declining prices Yet to the extent that investment and earnings have not declined more than the level of prices, once the adjustment is completed the common stockholder can be as well off in purchasing power as formerly Unless trading on equity multiplies the losses for the common stockholder, the position of the company may continue strong and dividends may be possible Dividends during the deflationary years may be drawn from accumulated surplus from a legal and an accounting point of view, but from an operator's point of view, they are being squeezed out of current assets, a smaller investment in inventories and receivables being possible From the economic point of view, the income account understates the real income just as it overstated it during inflation The individual stockholder can regard his reduced dollar dividends with some equanimity if he thinks in terms of their purchasing power rather than their dollar amount

The same process goes on at a slower pace with the fixed assets As the price level rises, the business is obliged to use more than the depreciation allowances to replace the old low-priced fixed assets Either retained earnings or financing is required to bridge the gap between depreciation and new cost [15] When the price level declines, the reverse is true and money squeezed from the fixed assets in the form of depreciation funds will be in excess of the amounts required for asset replacement and resultant cash may be available for retiring securities or paying dividends

**Price of the security.** The final consideration in our list is that of price Price is determined by the market, but the investor has the problem of deciding the fitness of the security for his needs and whether the issue is good value at the given price Price is only important as it determines yield For a fixed income security, such as a bond, mortgage, or preferred stock, the calculation of yield is a relatively simple matter of mathematics [16] The yield figure, or rate of return upon principal cost, is obtained by comparing price and promised income to get the percentage relationship, and is compared with the yield obtainable from other similar issues in the market In the case of common stocks the calculations usually made are superficially similar The dividend being paid currently is divided by the going market price to obtain dividend yield and the current earnings are similarly divided by price to obtain earnings return The actual yield is much more complex because the real problem is to evaluate not current return but the expected future stream of income Mathematically, this involves discounting a probably uneven stream of income The market price is the result of the valuation of this future income by investors, which, since it deals in unknown anticipations, can never be reduced to a precise figure Actual calculations are consequently confined to comparisons of price with income of the recent past When the resultant yields appear extremely high or low, they may merely reflect a general expectation that future income will be lower or higher than the amount of current or recent income

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[15] The United States Steel Corporation tried to allow for this inflation factor in 1947 by increasing charges for depreciation but abandoned the policy in the following year in the face of the stated opposition of the American Institute of Accountants, supported by the Securities and Exchange Commission, that the only accepted principle is to relate depreciation to the actual dollars originally spent For a fuller analysis see Paton, W A , statement before the Congressional Committee on The Economic Report on "Why Corporate Profits are Overstated," *Commercial and Financial Chronicle* (168 2490), Dec 16, 1948, p 2

[16] Discussed in Chapter 22

This discussion should help the reader to avoid two fallacies sometimes encountered in the field of security price theory The first is that *average* earnings will somehow invariably solve the problem of income measurement for the calculation of yield in the case of common stocks As suggested earlier, the average would have utility only if it is what is expected to be true for the future Even if the average for the past were known to be the exact average for future income, it would be necessary to recognize the influence of the pattern of variation In a year when business conditions were such that the years immediately ahead were likely to show low or no earnings, the value of the stock would be less than at a time when prosperity and above average income lay immediately ahead The reason for the difference in value is that in valuation one does not discount an average but the income by years, and the earlier years have a greater influence than later years in determining value In spite of these objections that should be recognized in practical work, we shall continue to use the conventional calculations partly because of their common use, partly because it is impossible to reduce subjective judgments of the future to statistical results, save where a special study has been made to project the future pattern of income of an individual stock, and partly because an average may, in the absence of any trend, represent the best objective measure of the probable future

This emphasis upon the pattern of future income explains why it is dangerous to regard, as some do, the net current assets per share of common stock as a kind of low water mark below which the investor should recognize a definite market bargain This calculation discards all fixed asset values as though they were worthless and includes only the current assets, which are relatively liquid, and subtracts all claims ahead of the common stock But unless immediate liquidation is contemplated, this apparently rock bottom valuation overlooks the fundamental point that any sum that is locked up and unavailable has a present value only to the extent that a stream of cash payments (whether income or principal) can be realized Even if the net current assets were as safe as a bank account they would lose some of their value if no income were available and they were not to become available to the stockholder Net current assets are, moreover, subject to the danger of dissipation through operating losses A spectacular example is found in the case of the Glenn L Martin Company, which, without any prior securities to introduce the trading on equity risk, suffered a complete disappearance of more than $37 per share in net current assets per share in the two years 1947 and 1948[17] The decrease was largely the result of operating losses following the end of World War II when the company, engaged in aircraft production, attempted to make the transition to peacetime conditions The result was the more disconcerting because of the company's favorable pre-war earnings in an industry, many of whose members had shown frequent deficits during that period

**Conclusions.** This chapter has been designed to outline general factors common to the study of all types of corporate securities As the specific problems of the investor in the various corporate fields are taken up in succeeding chapters, these general points will receive more concrete illustration Experience with the analytical problems of the different types of business cultivates the element of judgment so necessary to recognizing the important and minimizing the unimportant One purpose of this preliminary survey was to emphasize fundamentals, the matters that are of basic importance, so that they would be less likely to be lost sight of in the later discussion of practical details of the specific industry.

Later detailed material will seek to cover the essential, but will often be less than the expert and the specialist will need because of the limitations of space Those interested will gather further help from such investment materials as new security prospectuses, annual reports, investment services, and specialized studies Whether the investor will make but a slight study or one that is massive and penetrating will depend upon his interest and objectives The institutional investor making a huge commitment can afford to make a thoroughgoing survey that will cost more than the total sum committed by a small individual investor The economic expenditure for study is determined in large part by the size of the investment The more or less permanent investor seeking income and possibly some appreciation will also be inclined to give more weight to investment analysis of the type outlined here than the short-term speculator The latter often finds timing and diversification, coupled with a feeling for market psychology, more important than a solid understanding of the long-run quality of his selections

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[17] From $42,485,000, working capital declined to $9,700,000, and in the interval a long-term debt of $11,667,000 was created Losses for the two years totalled $35,900,000 after some $20,400,000 of tax credits through the loss carry-back provisions of the law These losses plus a net plant increase of $8,000,000 account for substantially all the working capital disappearance and long-term debt Book value per share dropped from $47 18 to $14 79

# 8

# Financial Analysis—Industrials

**Industrial securities.** Among investors the term "industrial securities" is used in a very broad sense Quite illogically it is often applied to the securities of practically all private enterprises except those that may be definitely classified as public utilities, railroads, real estate, and financial concerns, such as banks, insurance, and investment trusts In a way, it is unfortunate that the term should be used in so general a fashion for, after all, there is little in common between such diverse enterprises as copper mining, oil producing, automobile manufacturing, and chain store merchandising The three chief groups of "industrials" are (1) the extractive or mining, (2) the manufacturing; and (3) the merchandising industries Some integrated units merge all three types of activity, as in the petroleum group, where certain corporations own and operate the oil wells, refine the product, and sell the consumer the finished commodities

In developing methods of analysis that are applicable to railroad securities, one finds his problem simplified by the fact that he is dealing with corporations whose fundamental operations are to a certain extent similar, in spite of the different geographic, economic, and climatic conditions in various parts of the country The same may be said of electric light and power companies, traction companies, banks, insurance companies, and so on In determining methods of analysis that are adaptable to industrial securities, one finds a somewhat different situation existing Although it is possible to single out certain characteristics common to many different lines of activity, it is nevertheless desirable to work out for each industry certain refinements that take into account factors that are generally applicable to the industry under consideration

For example, in the analysis of textile securities, many statistics can be reduced to a "per spindle" basis, in the consideration of sugar securities, the "per bag" basis may serve as a common denominator, while in the analysis of the securities of oil companies, as much depends on giving proper consideration to the reserves of the company as to current operating data

**Selection of illustrative corporation** Rather than general discussion, this and the succeeding chapter on Industrials will follow an outline analysis with the help of an illustrative corporation The selected company, the United States Steel Corporation, is one of the three largest industrial giants of the country (Standard Oil Company of New Jersey and General Motors Corporation being the others) It is the largest concern in the basic iron and steel industry "Big Steel," as it is popularly known in financial circles, has over 200,000 preferred and common stockholders

An illustrative case should be particularly useful as a concrete attack upon the problem of analysis because the wide differences between the companies that are included in the "industrial" field make generalization more difficult than in the more homogeneous fields that follow To some extent this purpose of illustration will make it desirable to confine the material to those points outlined in the previous chapter that have the widest applicability throughout the corporate field Such a method of corporate security analysis will be adaptable to the corporate fields that follow For that reason financial statements will be emphasized and background industry material largely minimized This chapter will concentrate on the major factors of capital structure and income pattern so that the general character and income position of the securities may be seen The next chapter will cover some of the more commonly used relationships and data used to refine the general results found in the initial survey

A description of the steel industry and this most typical company will be dispensed with, then, because of the foregoing reasons, as well as the limitations of space, and the ready availability of information in ordinary reading The investment services report the points ordinarily regarded as having investment significance [1] Most students are already familiar with the general nature of the business and the large part it has played in the development of our present-day industrial economy. Without steel we should lack the rails for our transportation system, the machinery for our factories and mines, the automobile and household equipment that play so large a part in our daily life. Just as gold has become the symbol of the precious in the world of metals, so iron and steel are thought of as the most basic and useful.

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[1] For the reader interested in a description of the industry, vividly illustrated with pictures, *Steel Making in America*, a hundred page book by Douglas A Fisher, is recommended (United States Steel Corporation, 71 Broadway, New York 6, New York, 1949) While much of *The Economics of the Iron and Steel Industry* by C R Daugherty, M G de Chazeau, and S S Stratton, is concerned with the situation dur-

United States Steel, as the largest company in the industry, is represented in almost every phase and branch of the business. Founded in 1901 as a giant combination of ten leading companies, it brought together raw material, transportation, steel producing and fabricating properties that represented two thirds of the business. Its proportion of American steel production has declined from 66 to 33 per cent (1949) in the nearly half century since its founding, with its share showing a fairly regular diminishing trend. Products range from huge bridges to steel girders, rails, and pipe down to wire. In addition to finished products, customers are supplied with steel in various semi-finished forms such as rods, strips, and sheets, which go in quantity to such industries as the automobile manufacturers. The corporation as an integrated system reaches back to the mine for its own coal, iron ore, and limestone, moves its products over its own railroads, ships, and docks. Occasionally, it produces related products, such as cement, (Universal Atlas Cement Company) and housing (Gunnison Homes, Inc.). A list that shows only *principal* subsidiaries includes 33 different corporations. Unlike most present-day industrial corporations, the United States Steel Corporation is a holding company, and all operations are conducted through subsidiary companies rather than through a divisional organization within the company, such as General Motors chiefly employs.

The size of such a corporate system with resources of more than 2 billion dollars has both its advantages and disadvantages.[2] The diversification of its lines adds investment strength although it does not overcome the inherent instability of the steel industry from the business cycle influence over the years. Smaller specialized companies may suffer or profit from the peculiar conditions

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ing operation under the Steel Code of the NRA (National Recovery Administration), it contains material about operational conditions and financial data valuable as background in analyzing the industry. (New York: McGraw-Hill Book Company, 1937.) Histories of specific companies, such as are found in investment services, may also throw light on strategic factors in an industry.

[2] For an outline of the advantages and disadvantages of large scale operation, see Guthmann, H. G., and Dougall, H. E., *Corporate Financial Policy*, pp. 482–484 (New York, Prentice-Hall, Inc. 2nd ed., 1948).

affecting their special lines. A large concern can more readily absorb the cost of high-priced talent or of special experimental or developmental work because of its large volume.[3] Planning and the reduction of inter-company merchandising costs are easier for an integrated industry.

On the other hand, the large organization often displays a lack of flexibility. The danger exists of acquiring that red-tape and organizational timidity that seems to permeate a government bureaucracy. Smaller units often show a greater adaptability to change.[4] For the investor interested in growth, the large corporation lacks something of the possible attractiveness of a small one. On the general principle that "no tree grows to the sky," so the large company may have to devote its efforts to maintaining its position, let alone show growth.[5] As pointed out above, the Steel Corporation has only half as large a share of the business today as when founded, yet it has tripled its capacity. However, each case should be studied on its merits. An examination of the record of the individual company is generally more fruitful than philosophic generalization. In any case, profit growth should receive more attention than mere physical growth.

The ensuing study of the broad story of performance as it is told in the financial statements is the customary heart of investment analysis work and uses types of information available to all. The large institutional investor or substantial investment counsel organization would be likely to supplement such results with broader study and possibly field surveys after this preliminary analysis pointed to a desirable investment situation.

**Balance sheet position.** The comparative balance sheet of United States Steel is given on page 214. It is complete as given in the Annual Report for 1948, except for the omission of supporting schedules containing details on Plant and Equipment, Reserves, Inventories, and Long-Term Debt, and of explanatory notes. The reporting form is unconventional in its subtraction of current debt from current assets to show the working capital (sometimes called net working capital or net current assets), and again in the subtraction of long-term debt and reserves from the sum of working capital and fixed assets to arrive at the balance of equity ownership for stockholders  Even the usual heading of Balance Sheet has been altered to the less technical Statement of

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[3] (E. I.) du Pont de Nemours and Co. recently pointed out that the contribution it was able to make to the national security by developing new products and processes was made possible by its size and financial strength, which enabled it to absorb large costs and early operating losses.

[4] For a study of the efforts of a large corporation, General Motors, to meet these problems of size and particularly the overshadowing one, of obtaining adequate management, see Drucker, Peter, *The Concept of the Corporation* (New York: John Day Company, 1946).

[5] This tendency is suggested by data showing a slower rate of growth by the 200 largest manufacturing companies than the 800 others in the matter of working capital and invested capital. See Stokes, K. C., "Financial Trends of Large Manufacturing Corporations, 1936–46," *Survey of Current Business*, November, 1947, p. 5.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

| Current Assets | | *Dec 31, 1948* | *Dec 31, 1947* |
|---|---|---|---|
| Cash | | $ 225,351,809 | $ 223,960,071 |
| United States Government securities, at cost | | 213,842,725 | 303,011,034 |
| Receivables, less estimated bad debts | | 195,991,522 | 148,785,736 |
| Inventories† | | 339,175,195 | 289,236,644 |
| Total | | 974,361,251 | 964,993 485 |
| *Less* | | | |
| Current Liabilities | | | |
| Accounts payable | | 265,676,834 | 212,205,853 |
| Accrued taxes | | 207,479,992 | 181,231 868 |
| Dividends payable | | 25,887,237 | 17,183,985 |
| Long-term debt due within one year | | 5,811,751 | 5,723,681 |
| Total | | 504,855,814 | 416,345,387 |
| Working Capital | | 469,505,437 | 548,648,098 |
| Miscellaneous Investments, less estimated losses | | 21,410,571 | 21,645,480* |
| United States Government Securities Set Aside, at cost | | | |
| For property additions and replacements | | 155,000,000 | 155,000,000 |
| For expenditures arising out of war | | 21,000,000 | 26,000,000 |
| Plant and Equipment, less depreciation† | | 1,300,816,762 | 914,186,342* |
| Operating Parts and Supplies | | 41,944,280 | 39,604,436 |
| Costs Applicable to Future Periods | | 20,438,971 | 14,994,321 |
| Intangibles | | 1 | 1 |
| Total Assets Less Current Liabilities | | 2,030,116,022 | 1,720,078,678* |
| *Deduct* | | | |
| Long Term Debt† | | 71,554,196 | 77,229,313 |
| Reserves† | | | |
| For estimated additional costs arising out of war | | 20,562,262 | 25,420,807 |
| For insurance, contingencies and miscellaneous expenses | | 104,939,571 | 106,557,221 |
| Excess of Assets Over Liabilities and Reserves | | $1,833,059,993 | $1,510,871,337* |
| Ownership Evidenced By | | | |
| Preferred stock, 7% cumulative, par value $100 (3,602,811 shares) | | $ 360,281,100 | $ 360,281,100 |
| Common stock (8,703,252 shares) | | 1,472,778,893 | 1,150,590,237* |
| Stated capital, $100 per share | $870,325,200 | | |
| Income reinvested in business | 602,453,693 | | |
| Total | | $1,833,059,993 | $1,510,871,337* |

* After reclassification of treasury stock and reserve for replacement of properties
† Details in supporting schedules

Financial Position The more conventional arrangement of all assets in one vertical column parallel to a column of liabilities and stockholders' net worth will be employed in the following tables The Corporation has also adopted simplified terms, such as Costs Applicable to Future Periods instead of Deferred Charges, and has avoided the more technical accounting terminology of earlier years

The term Consolidated in the title shows the Corporation has treated its whole system of companies as a single business, eliminating corporate walls and intercompany relations and showing combined assets against the combined claims of the outside public against the group Were the balance sheet strictly confined to the corporation's own affairs as a holding company it would merely show certain stocks in subsidiaries held as assets and its own corporate obligations opposite Its income account in turn would reflect as income merely the dividends received from subsidiaries and no operating profits

Because the average reader frequently finds the larger figures confusingly large, our first step is to reproduce this balance sheet of giant amounts to one of significant amounts only (The cents have already been deleted in the original) The four significant figures, as measured by total assets, leave us with millions of dollars and omit the last six digits Even before this rewriting of the balance sheet, two remarkable large changes strike the eye the increases in Plant and Equipment and the Ownership total Ordinarily such concomitant changes would indicate a major retention of profits or sale of stock for the purpose of plant expansion The body of the report (page 5) reveals, however, one of those changes of accounting policy for which the reader must be on guard if he would avoid being misled It is stated that in 1935 the Reserve for Depreciation was increased by $270 million to cover obsolescence not covered by ordinary charges The net book value of the plant and the book equity of the common stock were decreased on their respective sides of the balance sheet This action, dictated by conservatism rather than by any rule of accounting, was influenced by the low rate of operations at the time—operations had averaged at only one third of capacity for the preceding 5 years—and the decline in property prices along with the general price level from what they had been in the preceding decade In 1948 the Board of Directors decided to reverse this entry, adding that no part of the earlier depreciation increase had ever appeared in the income statements as a depreciation cost or had ever been allowed as a deduction for income tax purposes The reversal had the effect of reducing, although only in part, the large understatement of property values as compared with going prices brought about by the post-war inflation That depreciation reserves were still adequate is suggested by the fact that they still totalled $1,632 million as against gross plant of $2,933 million even after the reversal, or 56 per cent, and this despite new additions and replacements totalling $696 million in the brief post-war period (1945–1948)

To place 1948 and 1947 figures on an equal footing for comparative purposes, this adjustment is carried back into the plant and ownership accounts for 1947, so that the difference between the years only reflects ordinary increases from additions and decreases from depreciation and retirements in the case of Plant and ordinary growth from retained earnings in the Ownership account Following the 1948 adjustment, the company also increased the stated value of the no par common stock from $75 to $100 per share, thereby reversing an earlier reduction

COMPARATIVE BALANCE SHEET
as of December 31
(Millions of Dollars)

| | *1948* | *1947* | | *1948* | *1947* |
|---|---|---|---|---|---|
| Cash | 225 | 224 | Current debt | 505 | 416 |
| Governments | 214 | 303 | Long-term debt | 72 | 77 |
| Receivables | 196 | 149 | Reserves | 126 | 132 |
| Inventories | 339 | 289 | Preferred stock | 360 | 360 |
| | | | Common stock | 870 | 870 |
| Total current | 974 | 965 | Earned surplus | 603 | 551 |
| Plant (net) | 1,301 | 1,184 | | | |
| Supplies | 42 | 39 | | | |
| Deferred items | 20 | 15 | | | |
| Investments | 199 | 203 | | | |
| Total | 2,536 | 2,406 | | 2,536 | 2,406 |

In this shrunken set of figures stated in millions only, the eye finds it easier to pick out the major changes Among the assets the chief expansion has been in Receivables, Inventories, and Plant. The source of the funds is seen to have been chiefly in (1) the disposal of liquid Governments, shown immediately next to cash, of which a substantial amount remains, (2) an increase in Current Debt, and (3) retained earnings shown here as Earned Surplus The substantial equality of these two groups of terms may be seen in the following summarizing table of major items only, minor items being omitted

MAJOR USES AND SOURCES OF FUNDS
during the calendar year 1948
(Millions of Dollars)

| *Uses* | | *Sources* | |
|---|---|---|---|
| To Increase | | Disposal of Governments | 89 |
| Receivables | 47 | Increase in | |
| Inventories | 50 | Current debt | 89 |
| Plant (net) | 117 | Retained earnings | 52 |
| | 214 | | 230 |

Another useful device to reduce the awesome nature of big figures, especially where proportion rather than absolute change is of interest, is the percentage balance sheet. The previous figures changed to round percentages are shown below

COMPARATIVE PERCENTAGE BALANCE SHEET
as of December 31

| | *1948* | *1947* | | *1948* | *1947* |
|---|---|---|---|---|---|
| Cash | 9 | 9 | Current debt | 20 | 17 |
| Governments | 9 | 13 | Long-term debt | 3 | 3 |
| Receivables | 8 | 6 | Reserves | 5 | 6 |
| Inventories | 13 | 12 | Preferred stock | 14 | 15 |
| Total current | 39 | 40 | Common stock | 34 | 36 |
| Plant (net) | 51 | 50 | Earned surplus | 24 | 23 |
| Supplies | 1 | 1 | | | |
| Deferred items | 1 | 1 | | | |
| Investments | 8 | 8 | | | |
| | 100 | 100 | | 100 | 100 |

The percentage balance sheet comparison shows that despite the huge amounts of dollar change, the proportions were changed but moderately The largest proportional changes were in the items mentioned above as showing large absolute changes About the only difference of impression is that as a result of the growth, items like the preferred and common stock, which did not change dollarwise, shrank slightly in relative importance[6]

To anticipate developments that may affect the balance sheet, the annual report should be read for plans being made for the future In this instance the latest report indicates the approaching end of the postwar development program of plant additions and replacements to catch up on work that could not be carried on during the war The remaining expenditures planned amount to $242 million of the original $938 million total—almost a billion. Free funds in the form of Governments both under current assets and under non-current Investments are more than ample to provide for the remainder of this program without financing

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[6] For comparative data in the study of balance sheet changes for the period 1936–1946, reference may be had to Stokes, K C, "Financial Trends of Large Manufacturing Corporations, 1936–46," which gives dollar and percentage changes of major asset groups, the working capital position, and the amount of long-term debt and net worth for durable and nondurable goods *Survey of Current Business*, November, 1947

The income account, given below, showed depreciation allowances of $146 million in 1948, which would have had the effect of reducing the net plant figure shown in the balance sheet above by that amount from the 1947 figure, if no replacements or other changes had occurred Since the amount of plant and equipment actually increased by $117 millions, it may be inferred that replacements and additions have been made by an amount sufficient both to offset the depreciation and to account for the net increase, or a total of $263 millions Actually, the schedule of property changes states that the total replacements and additions amounted to $275 million, the $12 million difference being accounted for by a sale of some property[7] Since depreciation expense is a non-cash item, it means in effect that the company has so much money available for the replacement of discarded assets or other corporate purposes If a similar amount is available in 1949 and 1950, it would mean a sum sufficient to cover the remainder of the postwar plant program without any recourse to the liquid investments previously mentioned

**Capital structure.** Aside from the foregoing general inspection of the comparative balance sheet, the capital structure is the only matter we shall examine at this point[8] These figures will give us an idea of the kind of securities available from this corporation and the proportions of funds supplied by the several classes of securities If more than the last year's balance sheet is used, any trend in the financing can be studied Direction of movement is often as important as the current situation in judging a corporate structure If the "conservative" approach is adopted and the possibility that all or some portion of the contingency reserves may be surplus is ignored, the capital structure and its proportions may be shown as follows·

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[7] The schedule states that the sale was effected at a book profit of $3 million, which was used as an offset in the depreciation account, so that the schedule shows total depreciation allowed to have been that amount greater than the net depreciation expense shown in the income account Normal accounting procedure would have been to report such a profit as a separate item of miscellaneous income

[8] Moody's uses the term capitalization to cover this concept, but, since the customary practice is to exclude surplus from that item and include only the bonds and stocks, the term capital structure is employed here Capital structure is the sum of capitalization and surplus

CAPITAL STRUCTURE

| | *1948* (Millions) | *1947* (Millions) | *1948* (Percentages) | *1947* (Percentages) |
|---|---|---|---|---|
| Long-term debt | $ 72 | $ 77 | 4 | 4 |
| Preferred stock | 360 | 360 | 19 | 19 |
| Common stock | 870 | 870 | 77 | 77 |
| Earned surplus | 603 | 551 | — | — |
| Total | 1,905 | 1,858 | 100 | 100 |

Some might prefer to show separate percentages for the Common Stock and for the Earned Surplus on the theory that they represent different forms of investment Actually, the important point is the *total* share supplied by the common stockholders, and the two accounts cannot be relied upon to reflect the distinction between amounts paid in by stockholders and retained earnings The Earned Surplus account may show more or less than the accumulation of earnings retained in the business In the case of the Steel Corporation, the Common Stock figure was reduced in 1935 from a par value of $100 per share to a stated value of $75 for no par stock so as to absorb a large part of the $270 million write-down of the Plant and Equipment If the increased depreciation reserve had really represented a permanent loss growing out of a failure to record enough depreciation in earlier years, the loss should have been used to reduce an overstated surplus account instead of a shrinkage in the stock account The entry only represented managerial conservatism which was reversed in 1948 as pointed out previously[9] Other corporations sometimes pay stock dividends, that is, a dividend consisting of their own shares rather than cash On such occasions certain amounts are transferred from Earned Surplus to Common Stock to back up the new shares After such a dividend, a part of the accumulation of retained earnings is represented in the balance sheet by Common Stock instead of the Earned Surplus account

To gain an idea of the common characteristics of financing in the steel industry, the analyst would study the capital structures of other companies A sample for comparison with the figures of United States Steel is shown in the accompanying table of capital structure proportions of a group of six companies for which other financial relationships are given in the following chapter.

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[9] Most accountants would probably agree that, since Goodwill and similar intangibles are not depreciated, their gradual write off over the years up to 1938 resulted in an understatement of the amount of retained earnings as reflected in the Earned Surplus growth Such intangibles represented a part of the sum paid in for the initial common stock issue of the corporation In the 36 years to December 31, 1937, $508,302,500 had been written off The balance of $260,368,521 was written down to $1 in 1938 *Moody's Manual of Investment, Industrials, 1940,* p 1918

Although the steel industry is afflicted with earnings fluctuations, all but one of these companies have some debt. The exception, Acme Steel, as we shall see later, has been a company of distinctly above-average prosperity, able to grow vigorously from retained earnings. Preferred stock, even though less of a hazard to solvency, is used by only half of these companies. Two of the users, United States Steel and Bethlehem, have noncallable preferreds created in the era of industrial combinations at the turn of the century when permanent preferreds and very long-term bonds were common. Armco, on the other hand, has a convertible feature in its preferred, which suggests that management may look forward to the ultimate elimination of the issue by exchange into common. In judging capital structure proportions, it should be remembered that the lower charges on debt as compared with preferred stock reduce the common stock share of income so much less. Sometimes, as in the case of the two high-rate noncallable preferreds, the burden on income is disproportionate to the percentage shown in the capital structure.

CAPITAL STRUCTURE PROPORTIONS OF SELECTED STEEL COMPANIES 1948

(Percentages)

| | *Funded Debt* | *Preferred Stock* | *Common Stock & Surplus* |
|---|---|---|---|
| United States Steel | 3.6 | 18.3 | 78.1* |
| Bethlehem Steel | 15.7 | 12.0 | 72.3 |
| Armco Steel | 27.1 | 7.8 | 65.1 |
| Inland Steel | 28.9 | — | 71.1 |
| National Steel | 14.0 | — | 86.0 |
| Acme Steel | — | — | 100.0 |

* Contingency reserve included here but not in preceding table.
Source. Compiled from Studley, Shupert & Co., *Factual Analyses of Industrial Securities*

Instead of studying the percentage proportions of the capital structure, reference is sometimes made to the ratio of long-term debt to proprietorship equity. These figures for United States Steel indicate that for every dollar such creditors had invested in the enterprise, the stockholders had $26.46 invested on the basis of 1948 balance sheet figures. This ratio is very conservative and is about four times as high as it was ten years earlier when funded debt totalled $233 million. The corporation has shown a persistent policy of debt reduction.

A ratio of not over 1 to 3 or 1 to 4 is usually regarded as desirable among industrials if the bonds are to achieve investment standing. This standard is the equivalent of setting the maximum funded debt at from 25 per cent to 20 per cent of the capital structure. Or, if it were assumed that there were no liabilities except the bonds, it would be the same as setting a minimum total assets-to-debt ratio of from 4 to 1 to 5 to 1. Too much emphasis should not be laid on this ratio, for in industrial security analysis the tendency is to emphasize earnings and working capital position.

From the common stockholders' standpoint it is sometimes desirable to show the ratio of bonds and preferred stock outstanding to total capital structure, for the preferred stock, of course, represents a contingent charge against earnings and assets that takes precedence over the common stock. In this case, preferred stock and bonds constitute 22 per cent of total capital structure, while common stock and surplus make up 78 per cent. Such a low proportion of senior obligations would indicate that the combined bond and preferred stock percentage meets the capital structure standard set for bonds above where the latter are to achieve investment standing. Before a conclusion can be reached as to the quality of these prior securities, however, the supporting evidence of earning power is essential.

**Possible surplus reserves.** The foregoing capital structure figures have ignored the possibility that the Reserves might represent true or potential surplus, which should be thought of as a part of the stockholders' investment. The five items shown as Reserves (excluding valuation reserves deducted from the assets) are detailed in supporting schedules to the balance sheet as follows:

| Reserves for | | *(Millions)* |
|---|---|---|
| Estimated additional costs arising out of war | | $ 21 |
| Insurance, contingencies and miscellaneous expenses | | |
| Insurance | $50 | |
| Contingencies | 38 | |
| Accident and hospital expenses | 9 | |
| Other expenses | 8 | 105 |
| Total | | $126 |

Of these items only two, those for accident and hospital and other expenses strongly indicate they are of the accrued expenses type, that is, they appear to represent actually incurred expenses of the past, and so are almost certain to be erased by the expenditure of cash for such purposes in the near future. The Estimated Additional Costs Arising Out of the War has a similar sound, but a footnote to the Income Statement relates that it is being used "to cover the higher costs of replacing inventories depleted during the war" The explanation indicates that the company has still to bring its Inventories back to their normal level, and when it does so it has to allow for increased replacement costs, an accounting feature that would have no significance save under the LIFO (last-in-first-out) system previously discussed (LIFO was begun for major classifications of steel inventories in 1941–1942, and extended to other items January 1, 1947) The reserve is a rough measure of the extent to which these remaining inventory purchases will be carried at less than their cost Because the accountants will treat this reserve as an offset to a part of later inventory costs and so absorb it in the income account, we shall exclude it as potential surplus, later discussing it as a part of the subject of understated assets under the next topic [10]

With regard to the Insurance reserve, the annual report states. "The subsidiary companies are, for the most part, self-insurers of their assets against fire, windstorm, marine, and related losses The balance of the insurance reserve is held available for absorbing possible losses of this character, and is considered adequate for this purpose" (Page 33) Such a reserve will, of course, provide no cash to replace the lost asset, but merely absorb the blow to the liability side, which would otherwise fall on Surplus, when and if an asset is destroyed or damaged and has to be written off This reserve, like that for Contingencies, represents the best estimate of management as to the losses deemed likely to occur over a period of years and which management believes are best spread over the years, just as insurance premiums would spread the cost, rather than wait till the actual events Since losses have not occurred as of the balance sheet date, the Insurance and Contingency reserves would constitute added surplus provided we take a liquidating-, rather than a going-concern point of view They amount to $88 million and would add 6 per cent to the $1,473 million book equity of the common stock In the interests of conservatism, investment services usually omit these reserves in computing book equity Should liquidation or merger arise as a possibility, they should be included, and in any case, it should be recognized that they are represented by equivalent assets that are contributing to the earning power of the stockholders until the loss occurs to wipe out so much assets There is always the possibility that the contingency may not occur, in which case the reserve may be transferred to Surplus Since the accountant is unlikely to show such transfers as ordinary income, the danger is that the long-run income over the years may be understated (because it was diminished in the year the reserve was set up) should the investor overlook the point Where the contingency and insurance reserves are accurately estimated, they merely smooth out the reported income over the years[11]

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[10] The rule now generally approved by accountants is that reserves for inventory fluctuation that represent managerial judgment should not be allowed to affect the reported earnings for a given year, nor later when used to offset inventory losses Only when the reserve is part of a systematic plan for valuing inventory, as under LIFO or the normal or base-stock method, are the annual allowances to be included in the calculation of the cost of goods sold and so an influence on per share earnings Committee on Accounting Procedures, *Bulletin No 31*, "Inventory Reserves" (New York American Institute of Accountants, 1947) For examples of varying treatment, see the Institute's *Accounting Trends in Corporate Reports* for 1948 (p 43)

**Book value of stock not current value.** The capital structure figures should be used with an appreciation of the accounting procedures which, by determining the values at which assets are to be carried, also determine the amount by which those assets will exceed liabilities and therefore the book amount of the stockholders equity Whenever these accounting procedures lead to asset values that are more or less than what they are worth currently, the net worth is, in a practical sense (though not legally or accountingwise), over or understated by that amount Such differences are likely to be especially important after large price level changes, such as the deflation of 1929–1933 or the inflation of 1940–1948[12]

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[11] Some critics of corporate profits are inclined to regard such reserves as a device for concealing profits even though they are invariably stated clearly The actual utilization of such allowances is seen in the reports of Procter & Gamble Company A reserve of $14 million for future inventory losses was set up in 1947, and increased to $37 million in 1948 In 1949 losses reduced the reserve to $16 million The relative importance of the annual allowances to the inventories and to the profits for the 6,410,000 shares of common may be seen from the following figures

| (Millions of Dollars) | *1946* | *1947* | *1948* | *1949* |
|---|---|---|---|---|
| Inventories* | 54 6 | 93 0 | 142 8 | 85 3 |
| Inventory reserve | 0 | 14 0 | 37 0 | 16 0 |
| Net profit before reserve | 21 3 | 48 6 | 65 4 | 28 7 |
| Reserve allowance (or credit) | — | 14 0 | 23 0 | 21 0cr |

* At lower of cost or market

Some investment services disregarded the reserve allowances in stating per share earnings Many analysts prefer this approach in order to place all concerns on as nearly a comparable basis as possible

[12] Such a low valuation of fixed assets may have explained the apparently high per cent of long-term debt in the capital structure of the United States Rubber Company when in 1947 that figure rose from 21 to 38 per cent because of borrowing to expand working capital As fixed assets are subsequently replaced at a higher price level and debt is retired, a lower and more normal per cent would be expected. It is worth noting that this company's bonds enjoyed investment standing in this instance in spite of breaking the 20–25 per cent rule mentioned earlier

Current assets that are constantly turning over tend to come closest to being carried at current prices Even inventories are constantly moving in the direction of a current price valuation, except when kept on the LIFO basis described earlier Then, the inventories are kept at what amounts to fixed prices for such materials and merchandise as were on hand at the time the system was inaugurated until such time as those kinds of goods are liquidated and not replaced The Steel Corporation uses this system, and when some of its normal stocks were partly liquidated because of heavy war demands, it created the reserve previously mentioned to enable it to make replacements with the help of this reserve at a figure equal to the original cost at the time the system began Some $5 million of the reserve was used up for that purpose during the year 1948

Here, then, in the asset Inventory, for that minority of concerns using LIFO, lies one of the major understatements if the standard of current prices is applied (To a much lesser degree some understatement is possible where those who keep inventory at the lower-of-cost-or-market find cost less than year-end market values ) The analyst intent upon the facts might utilize some measure of the rise in steel prices since the initiation of the LIFO system in order to obtain an approximate idea of the current worth of the inventories If the company being studied were one for which the difference were important for credit reasons, a balance sheet note stating the market value would be useful Such a disclosure would be in accord with the trend towards furnishing the investor and the public fuller information An idea of the possible magnitude of the difference between book and market value may be had by noting that if steel prices were 50 per cent higher than at the time the LIFO inventory accounting system began and applied to all of the inventories, their market worth would be $170 million more than the book figure (The 50 per cent figure was selected on the basis of the precedent of the net rise of the wholesale-commodity price index after the inflation of the World War I period had subsided )[18]

Because fixed assets are held for long periods during which prices can change greatly, and because their depreciation figure is neccessarily an estimated allowance, they are the assets that provide the most frequent and substantial differences between book value and current worth Under the usual accounting rules the gross plant is kept at the original cost and the accumulated depreciation reserve represents estimated wear and tear based ordinarily upon a straight-line percentage write-off over the estimated useful life of each constituent asset The balance reported should be read with these facts in mind and never thought of as representing either current market value of the assets or their current reproduction value As the Steel Corporation's report states the matter the net book value "does not purport to be either a realizable or replacement value" (Page 33)

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[18] Arundel Cotter, after noting that Steel's inventories increased only 21 per cent from $279 5 million in 1938 to $339 2 million ten years later, estimates that the figure would have been hitting $550 million had the previous accounting been used He states the result is a more than $200 cushion should prices decline, and no earnings loss would have to be registered for inventory decline until prices fell more than one third "'Playing it Safe' with U. S Steel," *Barron's*, May 9, 1949, p 32

**Capital structure with common stock at market value** Because of the imperfections of book values as a basis for judging the current situation, another method sometimes used to study the capital structure is to restate it with the market value of the common stock taking the place of book value Because market value represents an independent appraisal of what the common equity is worth as an investment and so might be thought of as a going-concern valuation, the method has strong appeal

If these figures are found in the case of the United States Steel Corporation, the following comparisons result

| | *(Millions)* |
|---|---|
| Long-term debt . | $ 72 |
| Preferred Stock at Par | 360 |
| Common at 77½ (average 1948 price) | 674 |
| Market value total investment (debt and preferred stock at par) | $1,106 |

When the market value of the total investment is substituted for book investment, the bonds do not appear to be quite so well supported by the following equities Thus, while each dollar of long-term debt is protected by $26 46 of junior equities in terms of book value, it is only protected by $14 36 of equities at their market value This latter basis is usually regarded as the more significant in determining the security behind bond issues because market price reflects the commercial value of the properties as a going concern It has the danger of emphasizing a valuation that often fluctuates erratically

The same process may be used in comparing the security behind preferred stock issues, which would give $1 87 Since the fortunes of the preferred stock are linked with those of the bonds, it is better practice to work out this ratio for the bonds and preferred stock combined to the market value of the common stock, which gives a figure of $1.56. Unless this "over-all" method of measuring the position of the preferred stock is used, an absurd result may be obtained of a ratio which shows the latter to be protected as well as, or better than, the bonds.

**U. S. Steel Consolidated Statement of Income.** The statement of earnings of the Steel Corporation as it appears in the annual report is reproduced here. The figures are given in comparative form for 1947 and 1948. Examination shows that a studied attempt has been made to simplify the figures for the general reader. As a result, some of the basic figures necessary for even a modest analysis are lacking. Those with an elementary accounting background will be surprised to find no separation of nonoperating or investment income, from that of the steel operations. A separation of production costs from those of selling and administration is also desirable. Similarly, the amounts spent on the repair and maintenance of property are useful. Any irregular or nonrecurring items must also be separately reported if the reader is to be able to use the current earnings for a judgment of probable future income. Adequate details are typically reported by corporations

CONSOLIDATED STATEMENT OF INCOME

| | *1948* | *1947* |
|---|---|---|
| Products and services sold | $2,481,508,535 | $2,122,786,243 |
| Costs | | |
| Employment costs | | |
| Wages and salaries | 1,005,829,124 | 872,496,549 |
| Social security taxes | 19,692,732 | 20,663,936 |
| Payments for pensions | 10,191,848 | 10,402,279 |
| | $1,035,713,704 | $ 903,562,764 |
| Products and services bought | 1,013,756,603 | 841,915,356 |
| Wear and exhaustion of facilities | 145,986,681 | 114,045,483 |
| War costs included herein provided for in prior years, less associated Federal income tax adjustments | 4,858,545 | 2,540,618 |
| Interest and other costs on long-term debt | 2,394,345 | 2,507,729 |
| State, local, and miscellaneous taxes | 49,887,902 | 45,197,381 |
| Estimated federal taxes on income | 109,000,000 | 91,000,000 |
| Total | $2,351,880,690 | $1,995,688,095 |
| Income | $ 129,627,845 | $ 127,098,148 |
| Dividends declared | | |
| On cumulative preferred stock (*$7 per share*) | 25,219,677 | 25,219,677 |
| On common stock (*$6 per share 1948, $5.25 per share 1947*) | 52,219,512 | 45,692,073 |
| Income reinvested in business | $ 52,188,656 | $ 56,186,398 |

coming under the jurisdiction of the Securities and Exchange Commission because their securities have been listed on a registered stock exchange or have been registered because of a sale to the public and so would be available for this company Such figures are most easily available for such companies as United States Steel in the investment services of *Moody's* and *Standard and Poor's*.

On the other hand, the annual report of this company is decidedly above average in the volume and quality of background information Two pages of figures tell the story of operations and finances back to the beginning of the company in 1902 Footnotes and supporting schedules provide illuminating detail The body of the report reflects the current problems of the corporation and the steel industry

**Relation of interest and preferred dividends to income** Since the investor is chiefly interested in a business as a going concern, he is likely to give even greater attention to the extent to which a given bond or preferred stock is protected by earnings than he is to the value of the assets behind those issues Similarly, the common stockholder should know the number of times both fixed charges and preferred dividend requirements are earned since their safety is a factor in the investment quality of his commitment It has been suggested that an industrial bond ought to show supporting assets in the balance sheet equal to about four times the par amount outstanding if the issue is to enjoy investment standing If the concern were engaged in manufacturing and about one half of the assets were fixed, this would limit the bonds to about 50 per cent of the fixed assets Many industrial bonds are unsecured, but where a mortgage is given, it typically is a lien only upon the fixed assets

Similarly, a common rule-of-thumb has been that an industrial's bond interest should be covered at least three times in order to rate investment quality Actually this rule is much too lenient if applied in prosperous years under present low interest rate conditions Thus, if an industrial in such a year earned 6 per cent on total assets and paid 3 per cent on bonds equal to but a fourth of those assets, its interest charges would be covered eight times over Categorical rules are dangerous because they tend to ignore nonstatistical factors, such as peculiarities of the industry or the particular concern, that need to be weighed to answer the fundamental question of ability to meet the terms of the contract To be convinced that a bond or preferred stock is of investment quality, the analyst should feel reasonably confident that the obligation will be met under the most adverse business conditions If there is doubt, the security may still be attractive as a "business man's" investment or a speculation because of a return that is compensatory for the risk involved

From the consolidated income account the following figures may be drawn for analysis

| | |
|---|---|
| Earnings available | $241,022,190 |
| Charges on subsidiary debt | 2,394,345 |
| | $238,627,845 |
| Estimated Federal taxes | 109,000,000 |
| Available for dividends | $129,627,845 |
| Preferred dividends | 25,219,677 |
| Balance | $104,408,168 |

These earnings figures show that the 1948 earnings were so large in relation to the consolidated interest charges for the system—over 100 times—as to make the calculation of little more than academic interest Even calculated on the basis of income *after* income taxes, the figure is very high Over the years the corporation has reduced its debt obligations to a minor place in the capital structure, and this comparison is with the relatively high post-war earnings The earnings record, which the Annual Report gives back to the founding of the corporation in 1902, shows that even when the debt was higher, income was sufficient to cover all interest except in four years, 1932–1934, and 1938 Current interest is only about one-half as much as it was in the early 1930's.

This debt now consists almost entirely of the obligations of five railroad subsidiaries Except where such issues are guaranteed, the security and earning power of each subsidiary must be studied independently Since the units mentioned represent strategic links in the corporation's operations, they would probably receive financial assistance from it if that were necessary for solvency The strong cash position of the system further indicates that such help would be probable if needed

If the preferred stock dividend coverage is calculated in the conventional manner by dividing the sum of the interest and preferred dividends into the available income *after* income taxes, a 4 78 "times earned" figure is obtained for 1948 If the rule-of-thumb suggested earlier for bonds of at least three times earned were applied, the 1948 coverage would indicate investment standing Furthermore, total debt and preferred stock amount to only 22 per cent, or less than one fourth, of capital structure, and working capital exceeds the combined debt and preferred stock[14] But the earnings for more than a single year must be studied to appraise the ability of a corporation to pay its preferred dividends. Some arbitrarily select the most recent ten years' earnings figures to obtain an average of performance on the theory that such a period is likely to provide a fair sample of both good and bad years

As a practical matter, the investor's problem is to judge probable *future* earnings in order to determine the company's likely ability to maintain the stipulated dividend and provide a desirable margin of surplus earnings Because no statistical measure can determine the future from the past record, judgment is always necessary, whatever the method of analysis In general, the more regular the past record, the more confident is the investor likely to be about the earnings future

In this instance, the record shows the preferred stock has been paid its regular $7 dividend since the beginning of the corporate history (1902), except during the depression of the early 1930's In four years, 1932–1935, less than the full rate was paid but the unpaid accumulation was paid in full in 1936 and 1937. The dividend was maintained in 1938 in spite of another deficit This record suggests ability to maintain the dividend, save under very adverse business conditions Such securities are often referred to as of "business men's" investment quality, creating an intermediate category between "investment" quality, which should be able to weather the most adverse conditions, and "speculative" quality, for which income payments are likely to vary even under ordinary conditions[15]

The generally conservative financial management is evidenced by such policies as the refinancing of the bulk of the bonded debt into common stock in 1929, a continuing policy of debt reduction since then, and a primary dependence upon retained earnings for capital needs With the virtual extinction of long-term debt and the passing of the postwar need for asset expansion, it would not be surprising to see such a management decide to repurchase some of its preferred shares in the open market, even though the issue is noncallable Certain signs of increased vulnerability to adverse business conditions, such as the decline in the margin of net income to sales (discussed at a later point) would make such a policy logical if the stock could be bought at a reasonable price Such a purchase program, amounting to a voluntary sinking fund, would provide some market price support for the preferred and increase the quality and earning power of the common stock

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[14] The use of capital structure proportions in this case illustrates one of its weaknesses The 7 per cent noncallable preferred is twice as heavy a burden on income as the same face amount of 3½ per cent bonds At present high corporate income tax rates, the corporation must actually earn more than three times as much, namely $11 29, to cover the $7 dividend as for 3½ per cent bonds $11 29 – $4 29 (38% income tax) = $7 00.

[15] That quality judgments are a matter of opinion should be emphasized Thus, Fitch, one of the few investment services willing to rate stocks, gives U S Steel preferred a rating of A, or investment quality, in its *Stock Summary* (1949) Steel common is rated BB, or a "business man's investment" (See Chapter 23 for further discussion of ratings) Large corporations tend to be rated highly because of prestige and a belief in their greater stability and permanence The disadvantages of size are typically ignored

**Earnings per share of common.** Probably the most studied statistic in appraising an industrial common stock is the record of earnings per share, which is found by dividing the net income after all prior claims by the number of outstanding common shares Since the purpose is to judge the probable future earnings, the investor will study the record to determine how far the past pattern will resemble the future and to weigh the degree of uncertainty of his forecast Greatest emphasis is placed upon the most recent earnings unless they are influenced by special factors not likely to recur Thus, some investors are inclined to disregard almost entirely the results for the four years of World War II, 1942–1945 Even 1941 was heavily influenced by expenditures for military purposes The revival of the military demand for steel in 1950 again gave significance to the figures for these years

The actual per share figures for U S Steel common are given in the next chapter after a review of qualitative factors influencing the appraisal of earning power

**Earnings per share versus current dividends** The emphasis to be placed by the investor on per share earnings as compared with the current dividend payments on common stock will depend on several things. Where the investor seeks an immediate current return on his commitment, he naturally will look for those issues that have a record for regular dividend disbursements On the other hand, he may prefer to forego present income in the form of dividends and invest in companies that are using net earnings for expansion purposes

It has already been indicated that such earnings as are not paid out in dividends add to the property of the common stockholder In fact, the situation here is very much the same as if all income, after prior obligations, were paid out to the common stockholder and a portion reinvested by him in the business, except that, in the former case, the investment is made by the board of directors instead of by the stockholder himself The corporation enjoys the advantage, however, of having for its use the full sum retained, whereas any dollars paid out as dividends would have to be divided with the taxgatherer because of personal income taxes before reinvestment From the standpoint of the investor, the benefit is had of the full sum retained applied to corporate needs and any immediate personal income taxes are avoided [16] Later, if reinvested earnings increase the income of the business, he may enjoy increased dividends, which the Federal Treasury will share through taxation Any addition to value is only taxed as capital gains in the event that the shares are sold [17]

To judge the effect of any retained earnings, the investor must study the balance sheet to see how such funds are employed and the income account to measure the profitability of their use If a business shows an ability to use funds in operations, whether as current or fixed assets, at a high rate of return, the stockholder may prefer a retained dollar to one of dividends Sometimes reinvested earnings are needed to maintain existing profits or prevent losses In such cases, the stockholder sees growing book investment with no corresponding improvement in earnings per share and has the difficult job of deciding whether his income has been badly spent for unprofitable ends or wisely spent to prevent capital losses much larger than the reinvested earnings Investors have sometimes shown themselves skeptical of the book values added to their stock, as in the case of the railroad industry during the 1940's, by failing to increase market prices by amounts commensurate with retained earnings

Sometimes earnings are retained and used to increase cash resources where they add little to earning power but may stabilize the dividend later Or they may be used to retire low interest cost debt, which adds little to earnings A dollar used to pay off 3 per cent debt adds only 3 cents to earnings, and even that is cut to 1 8 cents if corporate income taxes amount to 40 per cent In such a case the stockholder finds his gain in the improved investment quality of his stock as the prior claim is reduced. As debt declines, a more generous dividend policy may also be pursued.

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[16] Some have looked with jaundiced eye upon retained earnings as a diabolical device to escape personal income taxes, that is, the second tax on the same income since the income has already borne the corporate income tax Although penalty taxes have been devised to force dividend distributions, it is rarely suggested that stockholders be permitted to deduct any corporate deficits in computing personal income Under the existing tax system, even the stockholder intent upon cash income should own some stocks that are retaining earnings and building value to offset the almost inevitable losses in this field Otherwise, he treats as income the dividends on his successful common stock investments and creates no counter influence to preserve principal If wealthy, he suffers further by heavy personal income taxes on his cash dividends, but is given only a limited deduction upon capital losses when they are "realized "

[17] The advantage of capital gains over cash dividends because of lower rates of taxation is discussed in Chapter 24

The actual record of per share earnings and dividends is deferred to the next chapter to follow a review of the broad earnings picture in a comparison with that of other members of the steel industry.

# 9

# Financial Analysis—Industrials (Concluded)

**Earnings on book invested capital.** Imperfect as the results may be, probably the best single measure of profitability is to be had from the rate of return earned upon total investment. Total investment is defined to include the long-term investment of creditors and stockholders in the business. The comparable income consists of the interest paid upon such debt and the profits earned for the stockholders. The calculations may be illustrated from the 1948 figures for the United States Steel Corporation:

| | (Millions) |
|---|---|
| Total investment: | |
| Long-term debt | $ 71.6 |
| Preferred stock | 360.3 |
| Common stock (stated capital) | 870.3 |
| Earned surplus | 602.5 |
| Reserves (of surplus nature) | 125.5 |
| Total—Dec. 31, 1948 | $2,030.2 |
| Less retained earnings for 1948 | 52.2 |
| Total—Jan. 1, 1948 | $1,978.0 |
| Earnings for year: | |
| Interest | $ 2.4 |
| Net income for preferred and common stock | 129.6 |
| Total earnings | $ 132.0 |
| Rate of return on book invested capital | 6.7% |

This concept of invested capital is variously referred to as the bonds and net worth, the capital structure, or the capitalization and surplus of the business. If the balance sheet shows a substantial amount of current borrowing as a fairly regular feature, which is the exception rather than the rule for large companies, such borrowing and the related interest may be included to gain a full picture of the funds employed The method used above of working backward from the year-end balance sheet to obtain the initial investment is generally unnecessary but serves here the double purpose of (1) showing how to obtain the figure when an initial balance sheet is lacking and (2) obtaining a net worth figure that includes the $270 million of property values restored during 1948 to reverse a write-off made in 1935 In this illustration, the rate of return is calculated on the investment at the beginning of the year Some prefer to use the average investment during the year

More than the record of a single year is needed to obtain a fair picture of earning power The period should be long enough to reflect results in depression as well as during prosperity Where possible, a record for at least ten years is sought for this reason Here we shall examine the record for two decades, 1929–1948, but we shall group and average some of the years to facilitate study After the very prosperous year 1929, the decade of the 1930's is thus treated The average for the first five years included a severe depression that was at its worst for most companies in 1932 The last five years of the decade were marked by recovery, although 1938 was very depressed In the same manner the four war years 1942–1945 are averaged Although marked by a high volume of business for the conduct of the war, earnings were less in the steel industry than in ordinary years of high activity because of the excess profits tax levies

Because steel is the basic raw material for a wide variety of industries but particularly for such durable goods fields as automobile manufacturing, farm equipment, and housing and other construction, it reflects clearly the general swings of the business cycle Volume and profits fluctuate widely

In order to provide comparative background, the rate earned by five other steel companies is shown in the table with that of United States Steel These include Bethlehem Steel, second largest in the industry, three other large companies, Armco, Inland, and National, and one relatively small nonintegrated company largely engaged in the production of strip and sheet steel, Acme Steel In an industry that has earned but a moderate return for the period studied, the last company provides an interesting exception in the way of high return No attempt will be made here, because of limitations of space, to analyze differences arising from variant accounting policies in such matters as depreciation and inventory valuation, which have been most important in the post-war period Our objective will be to employ only the more important over-all measures available to any investor willing to examine the readily available annual reports as they are found in the investment services

Study of the rates earned on total investment will reveal the generally low rate earned and its comparative instability. The figures for U S Steel should also dispel the rather common illusions fostered in political quarters, that a very large corporation, especially when it is the largest in its field, has a commanding advantage that insures monopoly profits Inland and National with total assets in 1948 of $293 and $330 million, respectively, have shown average returns of 8 2 and 7 5 per cent as compared with the two leaders, U S Steel and Bethlehem, whose total assets were $2,535 and $1,029 million, respectively, and average returns were 3 8 and 4 7 per cent for the twenty-year period Critics of high profits in prosperous years are inclined to ignore the losses of bad years, which reduce average return to a very low figure for these two larger steel companies

RATE EARNED ON TOTAL INVESTED CAPITAL
1929–1945

| *Year* | *U S Steel* | *Bethlehem* | *Armco* | *Inland* | *National* | *Acme* |
|---|---|---|---|---|---|---|
| 1929 | 10 4% | 7 1% | 8 4% | 13 5% | 11 7% | 23 9% |
| 1930–34* | 0 0 | 0 9 | 1 2 | 3 5 | 4 8 | 7 1 |
| 1935–39* | 2 8 | 3 6 | 4 6 | 8 9 | 8 1 | 14 4 |
| 1940 | 7 3 | 8 5 | 5 6 | 10 5 | 8 3 | 15 9 |
| 1941 | 7 3 | 6 0 | 7 4 | 10 0 | 8 9 | 19 9 |
| 1942–45* | 4 2 | 6 0 | 5 5 | 7 1 | 5 9 | 11 2 |
| 1946 | 5 8 | 6 4 | 10 1 | 9 1 | 9 1 | 23 0 |
| 1947 | 7 8 | 7 7 | 14 3 | 14 9 | 11 0 | 32 2 |
| 1948 | 6 7 | 12 3 | 13 2 | 15 8 | 14 4 | 27 4 |
| * Average | 3 8 | 4 7 | 5 4 | 8 2 | 7 5 | 14 5 |

* These averages are geometric means
Source Compiled from Studley, Shupert & Co , *Analyses of Industrial Securities*

The investor interested in the securities of a given company should examine these figures for two main things First, he will wish to note the degree of earnings stability for its influence upon the quality of his prospective investment (The averaged figures for the 1930's somewhat conceal the worst fluctuations ) The use of the *rate* earned has advantages over dollar earnings figures, especially when growth and nongrowth companies are being compared Secondly, he will be interested in the rate earned wherever earnings are being retained The company that can earn a high return can grow and build earnings more rapidly from retained earnings The purchaser of common stock will naturally prefer the corporation that can compound his reinvested earnings at 8 or 10 per cent to one that earns but half as much or shows no growth in per share earnings in spite of retained earnings adding to the book equity per share Where growth has ceased and substantially all the earnings are distributed, an investor might be unconcerned over differences in the rate earned on *book* value provided he could buy the given common stocks at *market* prices that gave him the same rate of return on the latter figure, which is his purchase price. However, companies that earn a low average return on book investment may also show a greater tendency to deficits and instability of return, in which case the investor will require a lower market price per dollar of earnings to compensate for the greater risk

To illustrate the greater ease with which comparative figures may be studied to determine relative performance and stability, Figure 9 shows the annual rates earned on total book investment for the period 1929–1948 for the six selected steel companies

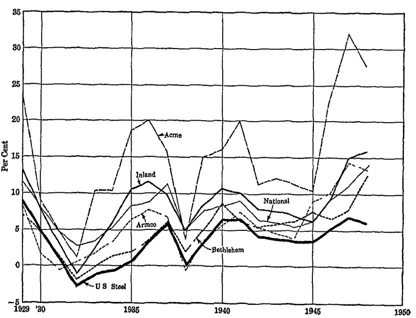

Figure 9 Per Cent Earned on Total Book Investment by Selected Steel Companies 1929–1948

**Operating ratios and operating earnings margins.** The term "operating ratio" has already been defined as the percentage of operating revenues consumed by operating expenses The operating ratio of a corporation under normal conditions reflects its operating efficiency It indicates that portion of its sales that is used up in actual manufacturing, selling, and administration, including depreciation on plant and equipment The behavior of the operating ratios of a typical manufacturing corporation under different conditions has already been discussed[1] The fact that during bad years operating expenses cannot be reduced in proportion to sales emphasizes the value of a low ratio during normal operations It is possible to compare the present efficiency of a corporation with its past performances by a study of the ratios over a period of years It is also possible to compare the operating ratios of different concerns in the same line of business to determine which concerns are the most efficiently operated Other things being equal, concerns with the lowest ratios are the most desirable media for investment Such concerns have the least to fear during periods of depression, and, if competition in the industry becomes severe, they are most likely to survive, because they can suffer the largest price cuts before showing deficits

Some find it easier to think in terms of the balance of earnings left over after operating expenses, a figure that, when added to the operating ratio, will equal 100 per cent This margin will, of course, be reduced by any income taxes before it can be shared between the various investors contributing the invested capital Neither does it reflect any non-operating items, such as investment income, nor the irregular charges and credits that are excluded from the operating section of the earnings statement

This operating earnings margin or per cent of operating profit to sales is shown for United States Steel and the other five selected companies in the accompanying table for seven selected years Years of deepest depression are represented by 1932 and 1938, years of prosperity and a high rate of operations by 1937 and 1940 The three postwar years of 1946–1948 would also be included in the latter classification

OPERATING EARNINGS MARGINS PER CENT TO SALES

| *Year* | *U S Steel* | *Bethlehem* | *Armco* | *Inland* | *National* | *Acme* |
|---|---|---|---|---|---|---|
| 1932 | *27 0d* | *14 4d* | *3 0d* | *11 6d* | 8 9 | 12 1 |
| 1937 | 11 4 | 10 6 | 8 6 | 16 2 | 17 2 | 14 5 |
| 1938 | *0 3d* | 4 9 | *2 0d* | 10 5 | 11 7 | 4 2 |
| 1940 | 12 2 | 13 2 | 8 4 | 15 7 | 15 3 | 17 4 |
| 1946 | 5 8 | 7 1 | 12 9 | 11 9 | 14 0 | 18 8 |
| 1947 | 10 0 | 8 4 | 13 4 | 16 1 | 14 0 | 22 3 |
| 1948 | 9 4 | 11 8 | 13 8 | 15 8 | 16 5 | 19 2 |

*d—deficit*
Source Compiled from *Moody's Manual of Investments*

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[1] See page 203

Since the general public is likely to show little interest in operating efficiency as such, but rather in what profits the stockholders get out of the sales dollar, a commonly published figure is the per cent of net income (or net profit) to sales  This figure is after income taxes and interest and may be affected by miscellaneous nonoperating items not strictly related to sales  It combines the amounts earned for preferred and common stockholders  Since this ratio has relatively less value for the investor, we shall give only average figures for substantial periods for U S Steel  The fact that it is one of the few ratios computed in that company's annual report points to its public interest

U S STEEL PER CENT OF NET INCOME OF SALES

(Averages for periods indicated)

| *Years* | |
|---|---|
| 1902–1909 | 16 8 |
| 1910–1919 | 13 9 |
| 1920–1929 | 9 6 |
| 1930–1939 | 0 5 |
| 1940–1948 | 5 2 |
| 1946–1948 | 5 7 |

Source *Annual Report of U S Steel, 1948*, page 29

Some points that should be noted in reading these figures are.

1 Interest charges, which are subtracted to arrive at the net income figure, were much more substantial in the earlier years when debt was high, which would have led us to expect an increasing net income margin rather than a decreasing one  The percentage importance of interest to sales decreased even before the huge 1929 reduction because dollar sales were growing with the rising price level that characterized so much of this period  The $21½ billion of sales in 1948 were more than twice the 1940 figure and more than five times the level of less than a half billion for the first decade

2 Whereas net income for stockholders rose to 36 1 and 17 5 per cent of sales in the years 1916 and 1917 of World War I, they fell to an average of 3 3 per cent in World War II (1942–1945)

3 United States Steel, in common with other members of the steel industry, took less than the free market price for their products in the postwar years after government price controls were removed  Higher prices in the grey market indicate this fact even though they cannot be used as a measure of the level at which *all* of the steel could have been sold  Management was motivated by a feeling of public responsibility to contribute toward the volun-

tary control of the price inflation problem, by a fear of a return to price controls, and probably a belief that a showing of higher dollar profits would stimulate union labor's wage demands to levels that would make costs insupportably high once the inflated demands of the postwar boom had passed.

A less-used ratio that is more pertinent to the common stock investor is the margin of net profit remaining for his share, which will differ from the preceding figure if preferred stock exists. Like the operating ratio or the net earnings margin discussed above, it it important as an indicator of stability. In general, the thinner the margin for a company's common stockholders within a given industry, the more fluctuating the net is likely to be. As between industries, however, some fields have so much less fixed expenses that they enjoy relatively stable earnings in spite of a thin profit margin. Even within an industry, some companies, because of better expense control or differences in the nature of their particular business, may show better profit stability than would be expected from their net profit margin.

The average per cent of net income available for the common stockholders to sales of the companies for which figures have been given above was as follows for the three years 1946–1948.

| | *1948* | *1947* | *1946* | *Average* |
|---|---|---|---|---|
| United States Steel | 4.22% | 4.81% | 4.27% | 4.43% |
| Bethlehem Steel | 6.39 | 4.32 | 4.47 | 5.06 |
| Armco Steel | 8.14 | 7.73 | 7.49 | 7.79 |
| Inland Steel | 9.83 | 7.17 | 6.68 | 7.89 |
| National Steel | 9.19 | 8.16 | 8.53 | 8.63 |
| Acme Steel | 12.12 | 13.67 | 11.22 | 12.34 |

Source: Compiled from *Moody's Manual of Investments, Industrials*

Once the analyst has embarked on the study of profitability of sales, many lines of study can be developed that may throw light on his central problem: The discovery of probable future earning power from the accounting record of past performance. Some of these approaches have been referred to in the discussion of general corporate security analysis, Chapter 7. A percentage analysis of the costs and expenses in relation to sales would be made to discover reasons for differences in the profitability of different companies in a given industry.

Depreciation expense comes in for special attention because the amount can be varied by policy so as to affect reported profits over the short-run. An attempt may be made to adjust reported profits to a basis of depreciation allowances, such as seems most common for the industry, in order to discover how profits would compare if reported on the same assumptions as to depreciation. The usual approach is to examine the year-by-year depreciation expense, or allowance, as it appears in the earnings statement as a per cent of the gross property that appears in the balance sheet at the beginning of the year. The total accumulated depreciation, or reserve, as it appears in the balance sheet as a deduction from gross plant is studied as a per cent of the latter figure. These two ratios, or per cents, are shown in the accompanying table for a single year, although study of the first figure over a period of years is always desirable.

ANNUAL DEPRECIATION AND TOTAL RESERVE FOR DEPRECIATION TO GROSS PLANT FOR SELECTED COMPANIES, 1948

| | *Depreciation Expense* | *Reserve for Depreciation* |
|---|---|---|
| United States Steel | 5.1% | 56% |
| Bethlehem Steel | 2.7 | 56 |
| Armco Steel | 3.6 | 42 |
| Inland Steel | 3.2 | 53 |
| National Steel | 6.0 | 50 |
| Acme Steel | 2.6 | 48 |

Source: Studley, Shupert & Company, *Factual Analysis of Industrial Securities*

Comparisons of over-all depreciation upon a composite of property of varying life are made on the assumption that the proportions and life expectancies of the various subclasses of plant and equipment are likely to be roughly similar within an industry. Actually, the nature of the property may vary considerably where operations and products are so heterogenous as they are within the steel industry. When depletion is combined with depreciation the result is further complicated. Depletion represents the exhaustion of a natural resource such as a coal or iron mine or an oil well.

The rate of exhaustion varies with each case so that no average has any typical or representative character that can enable one to judge the "conservatism" of the individual company. Ignoring these complications, the record shows that U. S. Steel had a composite depreciation rate in 1948 above that of other companies, except for National Steel, and above its own earlier rate. Its 5.1 per cent rate for 1948, which is stated to reflect "accelerated depreciation" compares with 4.2 per cent in 1947 and 2.8 per cent in 1946. The latter rate is more nearly in line with that of the other companies in the industry and the earlier practice of the company itself. Similarly, National's 6.0 per cent in 1948 is higher than its

3.9 and 2.7 per cent rates in the years 1947 and 1946, respectively. During the war years (1942–1945) all the companies showed high rates, presumably because mining properties were suffering more rapid depletion from a high rate of operations and because properly certificated war facilities constructed especially to aid the war effort were amortized over the war years. Should any of these wholly depreciated war facilities have value for peacetime operations, the reported book value constitutes an understatement of value.

The second column in the table, showing the per cent relation of the Reserve for Depreciation to gross plant, varies no more than might be expected. The largest write-offs are found in the 56 per cent figure for U. S. Steel and Bethlehem, the lowest, 42 per cent for Armco. Such differences reflect variations in the average age of the properties and sometimes different degrees of conservatism. Evidence pointing towards the latter would be sought by studying the record of annual allowances, as shown in the first column, over a period of years. Balance sheets would be studied to note additions of new property over the years to determine whether some companies might not have a greater proportion of youthful assets as an explanation for a low reserve accumulation.

**Utilization of investment: turnover ratios.** The margin of net earnings as a per cent of sales must be read in relation to the volume of sales that a dollar of invested capital can achieve. The dual problem of investing capital is (1) to utilize investment effectively to produce as much business volume, or sales, as possible, and (2) to have those sales as profitable as possible. One reason for comparing earnings margins of concerns in the same industry is that they are more likely to need similar amounts of capital for operation and so need to earn similar margins on sales to achieve a fair return on invested capital. But even business units within an industry may have widely variant needs for capital to achieve a given sales volume. Companies like U. S. Steel and Bethlehem, for example, are highly integrated, carrying on all the steps of steel production from producing the raw materials, such as mining iron ore, coal, and limestone to the fabrication, in some cases, of finished articles ready for the ultimate consumer. Others, like Acme, carry on only certain steps, such as the fashioning of steel strips from steel produced by others, which strips may be used by an ultimate consumer for such purposes as strengthening packages for other manufacturers or as material by an automobile manufacturer.

Consequently, a logical step in investment analysis after examining the earnings margins is to study the sales volume the company obtains from the capital it uses In general, a highly integrated company will have a high investment per dollar of sales and will need a wider margin of earnings on sales to obtain a reasonable return on the capital invested in the successive steps in production A single process company can earn a satisfactory return on its smaller investment with a narrower net income margin.

Measures of how effectively a company is utilizing its investment are had by comparing sales with total assets employed and with the several operating assets While these ratios are said to measure efficiency of utilization, the careful analyst making intercompany comparisons must be constantly on guard for qualifying factors that must be considered before any conclusions can be reached on the score of efficiency The factors are differences that result from (1) the kind of business, (2) the degree of integration, (3) the varying price levels at which assets may have been acquired, (4) ability to balance lower utilization by wider profit margins, and (5) accounting policies that result in differences in asset valuation

Those who use the compiled statistics of the investment services will find four chief measures of investment, or asset, utilization They relate sales to total assets, to plant, inventory, and receivables When these items are divided into sales the resulting ratios are often spoken of as "turnover measures" because of the original concept of inventory turnover These four ratios are given in the accompanying table for only a single year, although to be useful they should be studied over a longer period and not for a single year of high business activity such as 1948

TURNOVER RATIOS FOR SELECTED STEEL COMPANIES 1948

| *Company* | *Total Assets* | *Net Plant* | *Inventory* | *Receivables* |
|---|---|---|---|---|
| U S Steel | 0 98 | 1 90 | 7 3 | 12 6 |
| Bethlehem | 1 28 | 2 65 | 6 6 | 11 3 |
| Armco | 1 21 | 2 86 | 4 6 | 12 5 |
| Inland | 1 34 | 3 21 | 5 6 | 15 6 |
| National | 1 32 | 2 44 | 9 2 | 16 0 |
| Acme | 1 74 | 4 20 | 5 6 | 17 3 |

Source Compiled from *Moody's Manual of Investments*

1 *Total asset turnover* Although usually computed by dividing total assets into sales (as in the table), the more correct basis would be to divide by total *operating* assets, since any funds devoted to outside investments have no bearing on sales and produce their own independent income U S Steel, for example, held United States Government obligations amounting to $390 million as well as $21 million of Miscellaneous Investments, or a total

equal to 15 per cent of its $2,535 million of assets The exclusion of such assets and the recomputation of total *operating* asset turnover would increase the figure of 0 98 in the table to 1 16

Some of the comments and criticisms of the individual asset turnover figures that follow might be regarded as qualifications to be kept in mind in the interpretation of this total asset turnover.

2 *Plant turnover* is found by dividing the asset, Net Plant, into sales While it would be more exact to divide sales by the *average* property investment during the year rather than the amount shown in the closing balance sheet, no large difference results unless a large change has occurred in that asset during the year Even then, the investor has no knowledge when the added investment was made and became effective as a force contributing to additional sales volume In a period of growth some lag is almost invariable between the acquisition of new plant and the development of capacity operations A still longer period is usually needed to shake down operations to the point where normal efficiency will produce reasonable profit margins

Some analysts greatly prefer to compare sales with gross plant before depreciation allowances rather than net plant after such deductions They point out that plant has much the same physical capacity to produce goods whether old or new, that is, without regard to whether it has been reduced on the books by depreciation reserves

Because plant elements are replaced only after many years, the cost shown as gross plant may be greatly different from current replacement cost because of price level changes The relative disparity between the two may also vary greatly between companies Probably both gross and net plant turnover will decrease over the years following World War II the gross figure as old property is gradually replaced by new at a higher price level, the net figure for the additional reason that much fully depreciated property that could not be replaced during the war will be replaced by undepreciated property as conditions work back towards normal

3 *Inventory turnover* is defined as the cost of goods sold during the year divided by the average value of inventories on hand Because the analyst is sometimes unable to learn the cost of goods sold from the published earnings statement, it has become common in investment work to use the sales figure Similarly, the only inventory information is that found in the initial and final balance sheets It has become common to compare sales with final inventory as in the above table, which, while it diminishes the accuracy of the ratio as a measure of efficiency, makes the ratio more use-

ful in judging the current inventory policy of the company Thus, in a time of business uncertainty one likes to see an inventory relatively low in relation to sales, but when shortages or higher prices seem likely a substantial inventory becomes desirable

In reading the tabulated figures, it should be remembered that the more integrated companies will be expected to have a lower inventory turnover as well as a lower plant turnover

4. *Receivables turnover,* like the preceding ratios is found by dividing sales by the sum of the accounts and notes receivable of customers Unlike the preceding figures, it will not be affected by the degree of integration but by the terms of credit and collection policy In general, turnover will be higher as the company sells to stronger credit risks However, selling to weaker credit risks may be a desirable policy to achieve maximum sales volume and profitability

**Book value of common stock** After a general survey of the balance sheet and income account, we turn to the summarizing results as they appear in book value, earnings, and dividends per share of common stock The use of per share figures makes it easier for the investor to think in terms of the unit of investment The preceding analytical work can be thought of as a qualitative background against which he will value the share of stock and income he hopes to derive from it

The book value of a share of common stock is the excess of assets over liabilities and preferred stock as they are reflected in the balance sheet, the balance being divided by the number of shares outstanding (Since the intangible assets are ordinarily eliminated before the calculation, some prefer to use the expression "net tangible assets per share" rather than book value per share as more accurately indicating the figure used ) Actual subtraction of prior claims from the assets is unnecessary since the common stock equity is already reflected in the sum of the capital stock and surplus accounts Many practical investors are inclined to deprecate any significant weight being given to the book value on the grounds that earning power and dividends are the fundamental factors that make investment value so long as the business continues as a going concern They point out further that the balance sheet value of the assets may be much more or less than what they would be worth if they had to be replaced at current prices, especially after a period of major price level change, such as occurred in the deflation of the early 1930's and in the inflation that comes with or after war finance Nevertheless, the careful investor is disposed to give attention to this figure

One reason is that increasing book value from retained earnings is generally characteristic of a growth situation favorable to increasing earnings Whether growth in equity per share will probably result in enhanced earning power can only be determined by further study Sometimes the retained earnings may be used to reduce debt paying only a low rate of interest, in which case the improving investment quality of the stock rather than the growth of actual earning power is likely to be the result Another reason for attaching some importance to book value is the theory that large tangible assets constitute a form of insurance against excessive competition Companies and industries able to earn a relatively high rate of return on book value so that their stocks sell high relative to book value are felt to be an invitation to increased competition New concerns thus attracted into the field tend to increase competition and lower return Or, the existing companies may expand to garner more of the high profits and thus drive return down The extent to which any of the foregoing ideas may be applicable can be determined in each instance only by a study of the particular situation

A third possible advantage in high book value relative to purchase price exists when the Federal Government levies "excess profits" taxes, as during World Wars I and II One measure of "excess profit" is to compare the earnings against invested capital as recorded by the accounts Companies that have had a very low return do not become subject to this tax until the earnings rise above the rate stipulated in the law

Sometimes the net current assets per share of common stock (current assets minus *all* claims ahead of the common stock) may exceed the market value of the stock Here, again, some investors regard such a stock as likely to be an investment bargain Even though the relatively unmarketable fixed assets had no value, they argue that one could liquidate the current assets for sufficiently near their book value to realize substantially that figure[2] When the liquidation or sale of assets is a practical likelihood, this reasoning has merit, though some allowance must be made for any period of waiting for the realization to occur and for the uncertainty factor. But so long as the assets are expected to be locked up in the corporate business, their present value to the stockholder must be measured by going-concern standards, that is, in terms of prospective earning power Only as they promise a future stream of income or proceeds either by operation or liquidation do the assets provide a basis for the calculation of present value as it is expected to be reflected in the market price The stock market tends to reflect these hard facts as well as the hazard of dissipation of book value, whether in the form of current or fixed assets, through prospective operating losses

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[2] Graham, Benjamin, and Dodd, D L, *SecurityAnalysis* (New York McGraw-Hill Book Co, 2d edit, 1940), page 589

**Earnings and dividends per share of common.** The relation of common stock earnings to market values is a matter of first-rate interest to those who purchase common stocks in preference to preferred stocks and bonds It has consistently been our contention that the market value of common stocks is a function of *earnings available* and of the risk factors involved in the industry and in the concern itself By a comparison of the multiples at which the stocks of various companies sell in relation to earnings, it is possible to determine which appear to be cheap and which appear to be high priced The multiple is the figure by which earnings are multiplied to arrive at value Actual multiples used by the investor are found by examining the relation of price and earnings as they are found in the stock market

Others prefer to express the relationship between the price and earnings as the per cent which the earnings are to price or value (The per cent earned and the multiple are reciprocals ) Given a proper rate of return that the investor believes he should have on his invested dollar, he can value a common stock by "capitalizing earnings," that is, dividing earnings by the desired rate of return Thus, one dollar of earnings capitalized at 8 per cent is worth $12 50 ($1 00 — 08 = $12 50)

The average rate at which the market capitalizes common stock earnings is chiefly dependent upon (1) the general return available in the form of "pure" interest as reflected in high-grade bonds, and (2) the premium demanded in the way of higher return for the extra risk This premium is variable from time to time and among different companies The estimate of risk will determine the rate at which earnings will be capitalized to arrive at a market valuation of common stock [8]

The current dividend rate on common stock is another factor that has a bearing on values It is possible, however, for a stock to continue selling for years on the basis of earnings rather than of current dividends This fact is especially true of companies that are growing rapidly and consequently can use all earnings to good advantage for developmental purposes If the company is able to reinvest earnings so that they earn a high rate of return, a dollar of reinvested earnings may have a greater value than a dollar of cash dividends Such companies sometimes substitute stock dividends for cash dividends[4] In this way the stockholder is given some evidence of the additional investment in the business that has been made for him by the directors Where payments are made in this way, the small investor is likely to feel that he is being treated better than when earnings are simply credited to surplus, although there is no fundamental difference, so far as the extent to which he is permitted to participate in the assets and earnings of the company is concerned

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[8] For a further discussion of methods of valuing common stocks of industrials, securities, and rates of capitalization, see Badger, R E , *Valuation of Industrial Securities* (New York Prentice Hall, Inc , 1925), Chapters XI and XII

On the other hand, where little growth appears likely and the company has a fairly stable dividend record, the stockholder may regard the earnings retained as merely a stabilizing factor, so that dividends rather than the varying earnings will seem to be the dominant market influence Or, to put the matter more precisely, the earnings paid out as dividends appear to carry more weight dollar for dollar than similar earnings retained in building value Such valuation reasoning has the greatest logic where earnings show no particular trend The market influence of dividends is seen in the tendency for prices to rise (or fall) when a dividend increase (or decrease) is announced This price change is sometimes concealed when the market has discounted or forecasted the event before it happened, since a study of the financial statements often enables the investor to recognize the signs of a probable change

Because many investors have a basic interest in cash income and little in appreciation possibilities, the dividend yield receives considerable attention This yield is the percentage relation that the dividend bears to the market price that the investor has to pay to acquire the stock The relationship varies with changing dividend rates and market prices

**Earnings return and dividend yields of U. S Steel.** A frequent practice is to compare the market price of a common stock with the current earnings and dividend The accompanying tables present the earnings, dividends, and average market price (average of high and low) for United States Steel common in recent years Since the price represents a valuation of the future rather than merely current return, such figures might be felt to lack significance especially for a stock like that of U S Steel where fluctuations are wide and so may vary considerably from the long-run expectations of the future Nevertheless the relation is quite generally used and comparisons made with the similar ratios of other stocks in the same industry in order to discover comparative position The investor then makes his own mental adjustments for differentiating factors Some prefer, however, to compare price with an average of past years, choosing a period long enough to include good and bad years

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[4] In 1947 and 1948, for example, when many companies were compelled to retain a large proportion of their earnings to care for their heavy postwar capital requirements, they gave stock dividends, in addition to cash dividends Illustrations can be found in such companies as J I Case, Co, National Cash Register Company, Remington-Rand, Inc, Reynolds Metals Company, Texas Company, and International Business Machines Corporation

These relationships have the greatest utility in the study of investment quality stocks, where greater income stability tends to make any single year's return bear a more regular relation to average earning power Similarly, the relationship is more regular among companies where earnings show a common trend or direction If earnings for a particular company show an upward trend that seems likely to continue, then market price will tend to discount that expected improvement and per cent return from current earnings and dividends will appear low But the trend should be more than a temporary bulge resulting from fleeting or unusual circumstances to justify such a low rate When the market is riding what is widely believed to be a temporary crest of earnings, or a declining earnings trend seems probable, the current return on market price is likely to be a high per cent figure because the expected lower future earnings are being discounted [5]

In examining the table showing the relation between earnings for the given year and market price (average of the high and low for that year) certain points should be noted [6] Earnings fluctuate much more than price. The former may drop to a negative figure as seen in the deficit figures for United States Steel in six years The market price of Steel common could only be rationalized in such years by the expectation of future earnings The earnings for other leading industrials were also low in such years and that the

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[5] Under current high personal income tax rates, the discount should be great for the high return in the form of dividends that are, as a practical matter, a return of principal, will nevertheless be taxed as ordinary income On the other hand, individuals subject to high income-tax rates will find appreciation resulting from growing earnings especially profitable, since, even if realized, it will be subject to only the relatively low long term capital gains tax.

[6] The investor who wishes to compare per share data of United States Steel common with those of later years will need to keep in mind the split-up in 1949, which gave the holder three new shares for one old share To make the per share figures given here comparable with post-split-up figures, they should be divided by three Some investment services make this adjustment so that earnings, dividends, and market price per share can be more readily compared for the whole span of years with the share value in the latest year

RELATION OF CURRENT EARNINGS AND MARKET PRICE FOR COMMON STOCKS OF UNITED STATES STEEL AND LEADING INDUSTRIALS

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| | UNITED STATES STEEL | | | LEADING INDUSTRIALS* | |
| *Year* | *Average Market Price* | *Earned per Share* | *Rate Earned* | *Rate Earned* | *Price-Earnings Ratio* |
| 1948 | $ 77.50 | $12.00 | 15.48% | 14.79 | 6.76 |
| 1947 | 70.82 | 11.71 | 16.53 | 11.53 | 8.67 |
| 1946 | 81.25 | 7.28 | 8.96 | 7.08 | 14.12 |
| 1945 | 72.19 | 3.77 | 5.22 | 6.19 | 16.15 |
| 1944 | 57.06 | 4.09 | 7.17 | 7.46 | 13.40 |
| 1943 | 53.38 | 4.30 | 8.06 | 7.02 | 14.24 |
| 1942 | 50.00 | 5.29 | 10.58 | 9.18 | 10.89 |
| 1941 | 58.88 | 10.45 | 17.75 | 10.28 | 9.73 |
| 1940 | 59.25 | 8.85 | 14.94 | 8.16 | 12.26 |
| 1939 | 62.19 | 1.83 | 2.94 | 6.36 | 15.72 |
| 1938 | 54.62 | *d 3.78* | — | 4.39 | 22.78 |
| 1937 | 87.50 | 8.01 | 9.15 | 6.80 | 14.70 |
| 1936 | 63.12 | 2.91 | 4.61 | 5.87 | 17.03 |
| 1935 | 39.06 | *d 2.77* | — | 5.45 | 18.35 |
| 1934 | 44.62 | *d 5.39* | — | 3.78 | 26.47 |
| 1933 | 45.44 | *d 7.09* | — | 2.78 | 35.98 |
| 1932 | 36.94 | *d11.08* | — | 0.13 | — |
| 1931 | 94.14 | *d 1.40* | — | 2.83 | 35.28 |
| 1930 | 166.56 | 9.18 | 5.51 | 4.53 | 22.09 |
| 1929 | 205.88 | 21.19 | 10.29 | 6.14 | 16.28 |
| Medians | | | 9.06 | 6.36 | 15.72 |

*d—deficit*

* *Moody's Manual of Investments, Industrials,* 1949, p. a20. 125 companies.

market expected higher subsequent earnings is suggested by the very low current rate earned on market price in such years. For this group, earnings reached the vanishing point only in the single year 1932. On the other hand, in years when the market viewed current high earnings with skepticism, as in 1941 when the war and excess profits taxes lay just ahead, and in 1947 and 1948 when many expected the postwar boom to crack momentarily, we find current earnings a very high per cent on average market price both for Steel common and for leading industrials generally.

For those who prefer to use the price-earnings multiple, the reciprocal of the per cent earned on market price, a final column is added for that relation of leading industrial common stocks. Where the median, or middle value, for the earnings return on market price for leading industrials, was 6.36 per cent, the equivalent multiple was 15.72, meaning that the stock sold for that many times earnings. (The customary arithmetic average is avoided here because of possible undue influence of extreme cases.) How representative of "average" or "normal" conditions such a figure may be cannot be said. Because the period was heavily weighted with the depression years of the 1930's and the war years (1942–1945), when earnings were reduced by heavy excess profits taxes, it seems likely that during those years the expectation was for more than current earnings in the future and that more than $6.36 earnings per $100 of investment would ordinarily be needed to induce common stock investment even for leading industrial corporations. While it is a common rule-of-thumb that industrial stocks should sell for ten times earnings, better-grade stocks generally sell at a higher figure, sometimes as high as 15 to 20 times earnings where the investment prestige of the company is high and the earning power has shown a growth trend. Such a relationship, like that for bond yields, should be expected to vary from time to time.

What has just been said about the earnings-price relation should be kept in mind when the following table showing similar dividend-market price relations is studied. Here we find the median dividend yield for leading industrial common stocks to have been

RELATION OF CURRENT DIVIDEND AND MARKET PRICE FOR COMMON STOCKS OF UNITED STATES STEEL AND LEADING INDUSTRIALS

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| | United States Steel | | | Leading Industrials |
| *Year* | *Average Market Price* | *Dividend per Share* | *Dividend Yield* | *Dividend Yield** |
| 1948 | $ 77.50 | $5.00 | 6.45% | 5.87% |
| 1947 | 70.82 | 5.00 | 7.06 | 5.06 |
| 1946 | 81.25 | 4.00 | 4.92 | 3.75 |
| 1945 | 72.19 | 4.00 | 5.54 | 3.99 |
| 1944 | 57.06 | 4.00 | 7.01 | 4.56 |
| 1943 | 53.38 | 4.00 | 7.49 | 4.54 |
| 1942 | 50.00 | 4.00 | 8.00 | 6.44 |
| 1941 | 58.88 | 4.00 | 6.79 | 6.33 |
| 1940 | 59.25 | 3.00 | 5.06 | 5.30 |
| 1939 | 62.19 | — | — | 3.85 |
| 1938 | 54.62 | — | — | 3.86 |
| 1937 | 87.50 | 1.00 | 1.14 | 4.79 |
| 1936 | 63.12 | — | — | 3.36 |
| 1935 | 39.06 | — | — | 3.52 |
| 1934 | 44.62 | — | — | 3.42 |
| 1933 | 45.44 | — | — | 3.71 |
| 1932 | 36.94 | 0.50 | 1.35 | 7.28 |
| 1931 | 94.14 | 5.50 | 5.84 | 6.37 |
| 1930 | 166.56 | 7.00 | 4.20 | 4.93 |
| 1929 | 205.88 | 8.00 | 3.89 | 3.84 |
| Medians | | | 5.69 | 4.55 |

* *Moody's Manual of Investments, Industrials,* 1949, p. a20, 125 Companies

4 55 per cent over the twenty-year period Such a yield relation does not have the same significance as a bond yield series, since the return for a bond is a fixed amount, whereas dividends are variable Consequently, a low current yield may not mean that the market is content with such a rate but that it accepts that current return because higher dividends appear likely in the future On the other hand, when such high yields are found as in 1931, 1932, and 1948, they may disappear either as a result of later dividend reductions or a subsequent rise in market prices

**Book value of common stock.** While the relative unimportance of book value as compared with earning power has been pointed out, the figure may be regarded as useful evidence of growth through retained earnings For that reason, the book value per share is shown for the two years 1930 and 1948, and the per cent increase during that 18-year interval in the accompanying table These figures for the six steel companies selected shows growth that correlates roughly with differences in profitability discussed earlier Such correlation need not necessarily exist, but a business that earns a high rate of return on investment does find it easier to grow from retained earnings even though it pays out a conventional share of earnings An enterprise able to earn 20 per cent on its common stock equity can pay out one half of earnings and still increase book value 10 per cent When such a high return is earned, the incentive to retain more than the ordinary proportion of earnings is increased Such growth as 10 per cent per year if steadily compounded, would double book value in seven years

COMMON STOCK BOOK VALUE PER SHARE OF SELECTED STEEL COMPANIES 1930-1948

| | *1930* | *1948* | *Increase* |
|---|---|---|---|
| United States Steel | $164[*] | $169 | 3% |
| Bethlehem Steel | 47 | 63 | 34 |
| Armco Steel | 32 | 42 | 34 |
| Inland Steel | 19 | 37 | 95 |
| National Steel | 44 | 100 | 127 |
| Acme Steel | 4 93 | 13 40 | 172 |

[*] Reduced by $30 to allow for Intangibles actually written off in 1935

In practice, the use being made of the retained earnings would be checked to judge their probable effect upon earning power and, in cases where prior securities are retired, upon safety or investment quality

A comparison of book value figures for Steel common and market value shows that the latter has been characteristically lower after 1930, an indication of low earning power relative to investment

Figure 23, which appears in Chapter 25, shows the course of high-grade corporate bonds and dividend yields of industrial common stocks over the half century 1900–1949[7] This chart may be read as background for the fluctuations of individual securities While bond yields rose steadily between 1900 and 1920, stock yields rose erratically but much more vigorously Both showed similar yields of between 4 and 5 per cent in some of the very earliest years Bond yields did not rise decisively over 5 per cent until World War I, and even in the credit crisis of 1920 ran only a little over 6 per cent Stock yields had reached the 6 per cent level by 1915 and exceeded 8 per cent both in the war years and after 1920 In turn, when yields fell during the 1920's, stock return fell more rapidly until in the last years of the decade it was actually below bond yields It registered an average yield level of 4 per cent while bonds were still close to 5 per cent

The panicky conditions of the early 1930's pushed prices down and yields up for both bonds and stocks Bonds, however, resumed the downward yield trend begun in the 1920's In the 1940's they actually declined below 3 per cent Conditions in World War II were exactly the reverse of those in World War I when the heavy borrowing of the Government drove interest rates up Industrial stock yields fluctuated violently after 1933 The chart shows three peaks and three valleys in the years between then and 1949 for stock yields The average of the three highs was around 8 per cent, the average of the three lows about 4 per cent The violence of such movements can best be realized when it is noted that a change from 8 to 4 per cent for a stock would mean a 100 per cent rise in price if the dividend were constant, a change from 4 to 8 per cent, a drop of 50 per cent in price

While stock yields fluctuated more violently throughout the fifty-year period, they showed a tendency to move in the same direction both over the business cycle and over the longer term movement until about 1936 The chart because of its condensation of scale shows the broader movements more clearly While close study might show some correlation afterwards, the two series seem to have developed almost independent movements in the subsequent years It was as though investors had in the earlier years tended to regard the two fields as alternate or substitute forms of investment, but that the bond and stock markets had developed an independent coterie of investors in the later years

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[7] A few stocks other than industrials are included in this series.

In studying this material, it should be remembered that both dividends and earnings, which are capitalized by the market in the light of money rate conditions and risk, are themselves variable factors, unlike the fixed interest return paid upon bonds[8]

**Financial analysis card for comparisons.** In order to assemble the more important figures from the financial statements and such analytical ratios as have been suggested in the preceding discussion, some regular form is desirable Each individual or organization is likely to have a different idea as to the exact information desirable and so the accompanying "Industrial Financial Analysis Card" shown in Figure 10 is to be regarded as suggestive rather than definitive[9] Such a form will have the advantage of permitting an inter-year comparison of points that the compiler deems important With such a form, a comparison of a number of companies in the same industry will also be made easier The card provides a convenient arrangement for collecting the data necessary for computing the ratios suggested in the preceding discussion, as well as for entering these ratios for a given concern over a period of years On the reverse side of the card, quarterly data may be entered if desired

The first section of the card is devoted entirely to a collection of the data necessary for the computation of the ratios called for From a purely mechanical standpoint, there is a distinct advantage in collecting and arranging at the outset the items to be used in subsequent computations, especially where a rearrangement of the original corporation accounts is necessary, as is frequently the case in practice The computation of ratios thereafter becomes merely a matter of arithmetic Where the computations are made by actual division on a machine, or otherwise, it is sufficient to use only the first two or three digits of each number Computations may be facilitated, however, by the use of the slide rule, which gives sufficient accuracy for all practical purposes

The lower half of the card is devoted entirely to the presentation of the ratios that have been discussed in this chapter and the previous one The grouping used on the card was adopted with the idea of securing a satisfactory arrangement from a mechanical standpoint It will be observed in this connection that each section of the lower half of the card contains, so far as possible, a group of more or less related ratios The first section is devoted entirely to an analysis of the capital structure of the corporation under consideration Here is shown the percentage of capitalization made up of bonds, preferred stock, and common stock and surplus The relation of the par value of bonds and preferred stock outstanding to the market value of the underlying assets, as measured by the current prices of the common stock of the corporation, is likewise indicated

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[8] See comment accompanying Figure 23

[9] For other suggestions on form, see Graham, Benjamin, and Dodd, D L, *Security Analysis* (New York McGraw-Hill Book Co, 2d ed, 1940), Parts V and VI, and Guthmann, H G, *Analysis of Financial Statements* (New York Prentice-Hall, Inc, 3d ed, 1942), p 210

It should be clearly understood, when the ratio of debt to the market value of the investment is computed, that the market value of total investment theoretically should be found by multiplying

**Figure 10**

**Industrial Financial Analysis Card with Illustrative Figures for United States Steel Corporation, 1938, 1940, and 1946–1948**

(Unit, $1,000)

DATA

| *Year ending December 31* | *1948* | *1947* | *1946* | *1940* | *1938* |
|---|---|---|---|---|---|
| Gross sales & revenues | 2,473,706 | 2,116,573 | 1,485,667 | 1,145,608 | 632,533 |
| Cost of goods sold & oper expenses | 2,242,242 | 2,109,622 | 1,400,050 | 1,005,925 | 634,683 |
| Total income | 239,830 | 220,769 | 96,840 | 144,075 | 3,475 |
| Fixed charges | 2,395 | 2,508 | 4,777 | 7,942 | 8,262 |
| Net earnings (after taxes) | 129,628 | 127,098 | 88,622 | 102,211 | *7,717*d |
| Preferred dividend requirements | 25,220 | 25,220 | 25,220 | 25,220 | 25,220 |
| Total assets (less depre res) | 2,534,972 | 2,161,613 | 2,003,517 | 1,854,586 | 1,711,279 |
| Total investment (bonds & net worth) | 1,904,614 | 1,587,989 | 1,535,771 | 1,548,682 | 1,542,619 |
| Long term debt | 71,554 | 77,229 | 81,197 | 191,696 | 243,712 |
| Preferred stock | 360,281 | 360,281 | 360,281 | 360,281 | 360,281 |
| Common stock & surplus (excl intangibles) | 1,472,779 | 1,150,479 | 1,094,293 | 996,705 | 938,626 |
| Current assets | 974,361 | 964,933 | 954,639 | 634,634 | 510,339 |
| Current liabilities | 504,856 | 416,345 | 325,560 | 163,304 | 79,261 |
| Working capital | 169,505 | 548,648 | 629,079 | 471,330 | 431,077 |
| Property account (net) | 1,300,817 | 940,486 | 826,873 | 1,110,172 | 1,166,520 |
| Reserves for depreciation & depletion | 1,632,500 | 1,784,485 | 1,741,374 | 1,235,744 | 1,177,797 |
| Inventories | 339,175 | 289,237 | 283,396 | 308,985 | 307,479 |
| Depreciation & depletion expense | 145,987 | 114,045 | 68,739 | 69,085 | 48,533 |
| Market value | | | | | |
| Total investment | 1,106,337 | 1,053,265 | 1,148,617 | 1,067,645 | 1,078,320 |
| Net worth | 1,034,783 | 976,036 | 1,067,420 | 875,949 | 834,608 |
| Common stock equity | 674,502 | 615,755 | 707,139 | 515,668 | 474,327 |

d = deficit

RATIOS

| *Year ending December 31* | *1948* | *1947* | *1946* | *1940* | *1938* |
|---|---|---|---|---|---|
| % Investment in bonds | 3 8 | 4 9 | 5 3 | 12 3 | 15 7 |
| % Investment in pfd stock | 18 9 | 22 7 | 23 5 | 23 2 | 23 3 |
| % Investment comm & surp | 77 3 | 72 4 | 71 2 | 64 5 | 61 0 |
| % debt to market value invest | 6 47 | 7 33 | 7 07 | 17 96 | 22 60 |
| Work cap per $1,000 bonds | 6,562 0 | 7,104 0 | 7,747 0 | 2,459 0 | 1,769 0 |
| Current assets current liab | 1 93 | 2 32 | 2 93 | 3 89 | 6 46 |
| Times fixed charges earned before taxes | 102 19 | 89 05 | 26 38 | 19 05 | 0 42 |
| Times fixed charges earned after taxes | 55 14 | 51 68 | 19 55 | 15 15 | 0 07 |
| Times pfd dividends earned | 5 14 | 5 04 | 3 51 | 4 05 | |
| Time pfd div & charges earned | 4 78 | 4 67 | 3 11 | 3 37 | 01 |
| % Earned on total investment | 6 93 | 8 16 | 6 08 | 7 11 | 0004 |
| Operating ratio | 90 6 | 89 9 | 94 2 | 87 8 | 100 3 |
| % Deprec exp to property (gross) | 5 01 | 4 23 | 2 81 | 3 24 | 2 19 |
| % Deprec reser to prop (gross) | 55 6 | 65 5 | 67 8 | 52 7 | 50 2 |
| Plant turnover | 1 90 | 2 25 | 1 80 | 1 03 | 0 66 |
| Sales — final inventories | 7 29 | 7 32 | 5 24 | 3 71 | 2 49 |
| Average market price common | 77 5 | 70 75 | 81 25 | 59 25 | 54 5 |
| Earned per share common | 11 99 | 11 70 | 7 28 | 8 84 | 3 78d |
| Dividend per share common | 5 00 | 5 00 | 4 00 | 3 00 | |
| Book value per share common | 169 22a | 132 19 | 125 73 | 114 52 | 107 85 |

a Note adjustment mentioned in text

the amount of each security outstanding by its current market price In practice, however, it is customary to take both bonds and preferred stock at par, unless the latter is selling at a substantial discount For our purposes, it is usually sufficiently accurate to consider the preferred at par, unless it is selling at a discount of 25 per cent or more In this way one avoids considerable work as well as the logical difficulties that arise because the market price of the preferred stock is often determined by the specific dividend rate it bears The same situation exists when one computes the ratio of preferred stock combined with debt to the market value of net worth Here the preferred stock may be taken at par, but common stock should be considered at its current market value. In examining the ratio table, it will be noted that actually the per cent is given, rather than the ratio of long-term debt to the market value of total investment These two figures are reciprocals and tell the same story Thus, if the ratio of debt to investment were one-twentieth, it would be the same as 5 per cent By using the per cent here, the result can be more readily compared with the computation three lines higher in the ratio table where debt is related to investment at book value instead of market value

The second section is devoted in a general way to an analysis of earnings Here are presented such matters as the relation of and the percentage earned on total book investment It is highly desirable, when the investment position of bonds and preferred stocks is analyzed, to consider as closely related the protection afforded by assets and by earning power For this reason these two matters are considered in consecutive sections

The remaining sections are somewhat less definite in scope the

FINANCIAL ANALYSIS

Company________________________

QUARTERLY EARNINGS

| Year | 19 | 19 | 19 | 19 | 19 |
|---|---|---|---|---|---|
| Quarterly Earnings | | | | | |
| *1st Quarter* | | | | | |
| Earnings per share common | | | | | |
| Annual rate | | | | | |
| Average price | | | | | |
| Cur ratio price to earnings | | | | | |
| Our estimated value | | | | | |
| *2nd Quarter* | | | | | |
| Earnings per share common | | | | | |
| Annual rate | | | | | |
| Average price | | | | | |
| Cur ratio price to earnings | | | | | |
| Our estimated value | | | | | |
| *3rd Quarter* | | | | | |
| Earnings per share common | | | | | |
| Annual rate | | | | | |
| Average price | | | | | |
| Cur ratio price to earnings | | | | | |
| Our estimated value | | | | | |
| *4th Quarter* | | | | | |
| Earnings per share common | | | | | |
| Annual rate | | | | | |
| Average price | | | | | |
| Cur ratio price to earnings | | | | | |
| Our estimated value | | | | | |

Remarks

**Figure 10. Industrial Financial Analysis Card (reverse).**

third is used to designate what may be termed "management ratios," such as the operating ratio, inventory turnover, plant turnover, and the depreciation policy pursued The last section indicates the market price of common stock, its earnings, dividend record, and book value per share

**Use of analysis card illustrated** In order to illustrate the manner in which this card may be used for the purpose of analyzing the financial progress of a corporation over a period of years, the record of the United States Steel Corporation has been prepared for five years and placed in the illustrative form for the annual data Because of the limitations of space, the material presented here and in succeeding illustrations represents only a few years In any thorough study it is essential to examine figures over a period of sufficient length so that earnings performance can be seen under both favorable and adverse conditions A period of ten years is often recommended since it is almost certain to include some prosperous and some depression years

The high rate of activity resulting from pent-up peace-time demands, as well as other special conditions growing out of World War II should be recognized in interpreting the years 1948–46 (the most recent data available) The war years, 1942–1945, represent a special experience not likely to be regarded as representative of the immediate future, even though they are an essential part of the long-run picture and a matter for study to the extent that similar war and tax conditions may recur They were years of capacity operation for the steel industry, but profits were reduced by the excess profits taxes to a level below that of the years immediately preceding and following Even though the Pearl Harbor disaster did not occur until December of 1941, that year also reflected the heightened activity of defense preparations

As a result of this reasoning, 1940 and 1938 were selected to represent earlier peacetime years of prosperity and depression The year 1940 showed revenues and net profits not greatly different from the preceding prosperity peak in 1937 ($1,079 and $102 million, respectively, for 1940 versus $1,028 and $95 million for 1937) The alert investor would also note the much higher profit in the 1929 peak year on a very similar sales volume ($197 million of profits on revenues of $1,097 million) The short sharp recession in 1938 reduced revenues and profits greatly ($611 million and a deficit of $8 million, respectively) but to nothing like the low levels suffered in each of the three years 1932–1934 (average revenues $361 million and average deficit $43 million) Some who believe the excesses of the years following World War II show a curious parallel to the 1920's would prefer to use these more extreme conditions of the early 1930's as a bench mark of depression conditions that might recur in such a fluctuating industry as steel.

The figures and ratios in Figure 10 show that the funded debt constituted a very moderate proportion of the capital structure throughout the period under review. In 1938 the peak percentage was only 15.7. The decrease since then is indicative of a long-term policy of debt reduction. Comparison of the $71,554,000 of long-term debt with either the net fixed property of $1,300,817,000 or the working capital of $469,505,000 indicates that the amount is within conservative limits. There is $6,562 of working capital per $1,000 of fixed debt, or 6½ times, far more than the 100 per cent that is regarded as the conservative minimum. The general financial ease indicated by a current ratio of four or better in prewar years has been replaced by a ratio slightly below the usually accepted figure of two for industrial corporations. Factors indicating that the situation is still satisfactorily easy are (1) the high proportion of current assets in cash and Governments, (2) the absence of bank borrowing among the current liabilities, and (3) a fund of Government securities carried outside of the current assets for future long-term purposes.

The earnings picture was poor in 1938 with less than enough to pay fixed charges. That the charges are inconsiderable is seen in the swing to a huge coverage in the subsequent prosperous years. The average coverage for recent years has been so high compared with the conventional minimum standard of 3.00 (or even 5.00 if current low interest rates are considered) for industrial bonds of investment quality as to make the calculation unnecessary. In fact, where the debt changes greatly from year to year, as in this case, a more useful measure would be to compare average earnings with the charges at the end of the last year, since they, rather than charges of earlier periods, are the burden that earnings have to carry. With substantial working capital to draw upon in occasionally bad years, this fluctuation record loses much of its investment hazard. Furthermore, this company shows large allowances for depreciation and depletion, which in years that require no replacements or capital expenditures represent funds that can be employed for interest or debt retirement. It is for this reason that some analysts compute coverage *before* depreciation to show short-run ability to meet charges without draining working capital.

The position of the preferred is less secure. It forms only a moderate part of the capital structure—bonds and preferred are 22.7 per cent of the total.

With anything like normal earning power on the total invested capital, the company should be able to cover its preferred dividend by a margin sufficient to give this preferred stock an investment rating However, since 1930, the earnings have on the average been low relative to investment and variable In the five years 1935–1939, they ranged from 7 per cent in 1937 to a nominal amount in 1938, averaging 3 per cent on total investment (bonds plus net worth) Since then earnings have provided a very satisfactory coverage, as may be seen by comparing the annual preferred dividend requirement of $25 2 million with the net income after interest charges The prior interest claim has averaged $6 million since 1935 but currently amounts to less than $2½ millions

NET AVAILABLE FOR PREFERRED DIVIDENDS 1935–1948

| *Period* | *Average Amount* |
|---|---|
| 1946–1948 | $115 1 |
| 1942–1945 | 63 1 |
| 1940–1941 | 109 2 |
| 1935–1939 | 60 0 |

Whether U S Steel preferred should be rated as of investment quality, that is, able to pay its regular dividend even under adverse conditions, or only as of businessman's investment quality, that is, able to pay except under adverse conditions, would be a matter of debate Those taking the first and more favorable view would point to (1) the shrinkage of debt to a nominal and still decreasing figure, which gives more freedom to pay a dividend not currently earned, (2) the large program of capital expenditures, which should improve operating efficiency, and (3) the heavy depreciation allowances of the war and postwar period The more pessimistic would point to (1) the dividend record It was reduced for the first time during the four years 1932–1935, only $2 being paid in the three later years, but the unpaid accumulation was wholly paid in 1936 and 1937, (2) the declining trend in the profit margin on sales, which is also adverse; it averaged but 5 7 per cent in the three boom years after World War II as against 12 4 per cent in the five years 1926–1930 However, such matters as depreciation policy, higher income taxes, fear of a return of government price controls, and labor union criticism of profits during the later period should be given consideration, (3) the long-term record, which has shown a tendency for this leading company's share of the steel business to shrink, and (4) the poorer earnings performance in recent years as compared with some of the company's major competitors, which would raise the question of competitive position Doubtless other factors enter the debate, such as the influence of a higher general price level, the outlook for corporate taxes, and the effect of steel union demands for higher wages, pensions, and stable employment The situation emphasizes how impossible it is to make any mechanical or purely statistical measure of quality that is wholly satisfying, and the necessity of admitting reliance upon informed judgment in many appraisals of investment quality The fact that quality may change with time should also be remembered

The dividend record of the common stock has been much less satisfactory than that of the preferred in the period since 1930 Annual payments were unbroken from 1906 through 1931, the company using accumulated surplus in some years to make dividends much more stable than annual earnings From 1932 through 1939 only one small dividend was paid, in 1937. Since then the company has labored to restore the standing of the common by declaring a steady dividend of $4 per share from 1940 through 1947 with moderate increases thereafter The clear intent has been to achieve a stability that would give the common a businessman's investment rating Until another depression has tested this company's ability to achieve this objective, the record bespeaks only speculative standing, that is, ability to pay regular dividends only under favorable business conditions Here again, the judgment of some might differ and they might argue that prospects have improved since the 1930's to the point that fairly regular dividends might be expected except under very adverse conditions[10] The uncertainties that make difficult a more precise appraisal were outlined in the preceding discussion of the preferred stock (If this card had been prepared to include later years, all *per share* figures, as suggested earlier, should be divided by three to adjust them to a basis comparable with those after the three-for-one split-up in 1949 )

A final word should be added on two points The first is that because price and anticipated income vary much more for securities of less than investment quality rating, indeed for almost all common stocks, much more care is necessary in the timing of purchases Even the best quality stock may sell at a price so high in relation to prospective income as to make it an unattractive purchase. The second point is that stocks of less than investment quality may fill a definite function in a diversified investment program for an individual When purchased at reasonable prices and combined with more steady-going investment issues, they offer two possible attractions (1) The more fluctuating income of lower grade common stocks may make them more responsive to price level changes and so provide that much more hedge aaginst inflation (2) Such stocks also offer greater possibilities of cyclical appreciation, which, while secondary to income considerations in an investment program, is nevertheless important where heavy personal income taxes make capital gains more valuable than equivalent cash income[11]

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[10] Indicative of this point of view and illustrative of the personal judgment element in quality appraisal is the rating by one investment service (1949) of U S Steel common in the same class with General Motors common and only one step below Standard Oil of New Jersey, although General Motors has had an unbroken dividend record back to 1915 and Standard Oil to 1882 All three are rated as "businessmen's investments "

**Summary.** These two chapters dealing with the analysis of industrial securities have directed attention to the more important points of study and at the same time illustrated the application of such ideas to the case of United States Steel Because industrial corporations lean so heavily upon stockholders' investment and the analysis and valuation of such stocks is relatively more difficult than bonds, emphasis has been placed upon the former in this discussion In succeeding chapters similar applied illustrations would lead to duplication undesirable in a work of such broad coverage as this text and so the ensuing discussion is largely devoted to the peculiar problems and background of the several other fields of business enterprise that would cause the investor to vary his application of the general approach given here

The reader should also remember that the efforts of a general work on Investments must necessarily be limited to the broader phases of the subject The large institutional investor or the investment advisor with means to devote to research would dig more deeply into matters which are but suggested here Such investigation would concern itself particularly with such matters as (1) the long-run conditions of the industry and its cyclical characteristics, (2) the price action of its securities, (3) the sources and profit-influence of the prices of goods and materials purchased, (4) labor conditions and labor relations, (5) markets and marketing methods, (6) the caliber of management, and (7) the size of management's holdings of the corporation's securities

In general, our discussion has been confined to the sort of information that has become fairly available in recent years for larger corporations in the various investment services Many investors and investment advisors lean heavily upon such ready-made information Custom-built reports are expensive Probably the most valuable supplement to the readily available statistical data is simple graphic presentation of the more important facts about sales, earnings, common per share figures on earnings, dividends, and book value, and capital structure proportions. The more elaborate the report, the more attention may be given to graphic material on supplementary information in a form to permit comparisons over time for the given company and between companies of similar character. The reader may gain an idea of the comparative effectiveness of tables of figures and graphic presentation by experimenting with the latter. To illustrate the use of the latter, Figure 11 shows the earnings of United States Steel Corporation over the 20-year period 1929–1948. The simplest form of bar chart is employed and the several shares in the earnings are shown in the order of their priority: interest charges, preferred dividends actually paid, common dividends, and retained earnings or surplus. Some would use cross-hatching to distinguish the various sections of the bar. Others might wish to show income taxes because of the proportionate share in the net *after* the interest charges, or they might wish to introduce depreciation expense, because of the available funds it represents to meet charges when it is earned. When a corporation pays unearned interest or dividends, the result is a deficit and is shown in black, as in the year 1931, the white portion reflecting earnings. When there is a

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[11] See Chapter 24 on tax problems of the investor.

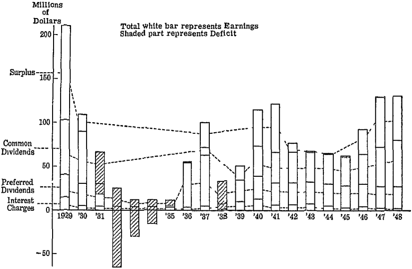

Figure 11 United States Steel Corporation Earnings and Their Distribution

loss before interest, as in 1932, the total deficit runs above and below the line, the part above being the result of the unearned payments to the security holders, and the part below the deficit from operations

What facts will be worthy of graphic presentation will vary with the corporation

A review of the points to be covered in a study such as is suggested by our illustration might be outlined as follows·

1 *Strength of financial position* This point is covered chiefly by a study of assets in their relation to debts as reflected in the balance sheet The current ratio is used to check ability to pay shortly maturing liabilities The capital structure proportions (preferably with intangible assets eliminated), the ratio of working capital to bonds, and the ratio of long-term debt to the market value of the succeeding net worth taken at market value are all intended to weigh the asset support for indebtedness

2 *Earnings position* The income of the corporation is studied in relation to the fixed and contingent charges and to the invested capital The points of major interest are (a) adequacy in relation to charges, (b) stability, and (c) trend Growth, as shown by rising earnings and increasing book value for the common stock, is especially desired because it bolsters the quality of the senior issues and raises hopes for common stock appreciation

Under this heading, expansion would be most likely in a more detailed analysis Depreciation allowances would be compared with gross plant and with sales Repairs and maintenance, if reported, would be given similar attention The accumulated depreciation and depletion reserves would be compared with the total fixed property The object is to detect an excessive or inadequate statement of expense at this point and so a misstatement of earnings This item is usually of far more importance in the utility field than among industrials

3 *Efficiency of operations* Here intercompany comparisons are common, although differences in the character of companies often exist within the industry The operating ratio, or its complementary ratio of net income left for the payment of capital to sales, is examined The more slender the margin of earnings, the easier it is for a slight adverse change to reduce seriously or wipe out the net income The efficiency with which capital is employed is checked by comparisons of plant, inventory, and sometimes receivables and total operating assets, with the annual sales Apparently excessive investment in certain assets may betray doubtful or valueless items Here also would be studied the re-

turn on non-operating assets if they were of sufficient importance

4 *Reasonable price* The last, but by no means least, consideration is whether the market price is reasonable in relation to the income offered and the investment quality In the case of common stock, the chief items reviewed are price, earnings, and dividends These have to be read in the light of the many intangible conditioning factors and the hopes of the future Clearly, the statistical summary offered here is but an outline approach which is most useful when supported by a wide knowledge of the industry and of the tendencies in the economic world that will shape the income that is to come

# 10

# Public Utilities—General

**Inadequacy of customary grouping of investments.** The customary grouping of investments into the four distinct classes—government and municipal, railroad, public utility, and industrial—is not entirely logical, even though custom and usage recommend its adoption. Railroads, for instance, are no less a public utility than electric light and power, gas, and electric railway companies, yet a separate classification is given to steam roads. Furthermore, the term "public utilities," as now used, includes such diverse industries as the electric light and power, artificial and natural gas, telephone and telegraph, private water companies, and transit companies (buses, street and interurban railways). From the standpoint of investment, there are wide differences among these groups. Investments in electric light and power operating companies as a class warranted a high rating in recent years, in view of their ability to withstand business depression. The securities of electric railway companies, however, are of a decidedly low standing. One cannot, therefore, make the statement that all public utility investments are desirable.[1]

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[1] Some idea of the relative investment importance of certain public utility industries may be gained from the following estimates of gross plant investment in 1947 in the industries specified:

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|---|---|
| Electric Companies (Commercial) | $13,610,000,000 |
| Telephone Companies | 7,786,000,000 |
| Natural Gas Companies (excludes pipe line cos.) | 2,761,000,000 |
| Telegraph Companies | 410,000,000 |

If gas plant owned by electric companies bore the same relation to total manufactured gas plant investment as in 1937 (68.8%), the total amount may be estimated at $2,106 millions for 1947.

*Moody's Manual of Investments: Public Utility Securities* (New York: Moody's Investors Service, 1949), pp. a 13, a 48, a 53, a 57, a 59.

**Common characteristics of public utility enterprises: public control.** Despite the apparent dissimilarity among various public utility industries, there are certain points of similarity This statement applies to the steam railroad as well as to those businesses that are spoken of as strictly utilities The common characteristics may be grouped under four headings

1 The concerns perform a particularly important service In legal cases they are spoken of as businesses "affected with a public interest " While it is true that all business is charged in some way or other with a public interest, it is felt that so-called public utilities supply commodities or services that are closely associated with the public welfare [2]

2 They operate under conditions that tend toward monopoly. This tendency may be due to the economic law of increasing returns, or to the excessive cost of duplicating plant and equipment

3 They enjoy special legal privileges (a) They often operate under franchises that give them the right to use public highways (b) They are accorded the benefits of the state's right to acquire property under eminent domain

4 Finally, they perform services that are sometimes recognized as the functions of government (Consider, for example, the furnishing of water to a community )

An important corollary to be noted here is that public utilities are subject to regulation Such regulation is exercised through the common law, by franchise restrictions, and by legislative enactment, as well as through positive control by means of administrative commissions [3] It is this fact as much as any other that differ-

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[2] The legal distinction between property devoted to public, as opposed to private, use has long been made in common law A clear enunciation of this distinction is found in the opinion of the Supreme Court in the case of Munn v Illinois, in which the right of the state to establish the charges that a grain elevator could make was upheld An excerpt from the decision follows " we find that when private property is 'affected with a public interest, it ceases to be *juris privati* only ' Private property does become clothed with a public interest when used in a manner to make it of public consequence, and affect the community at large When, therefore, one devotes his property to a use in which the public has an interest, he, in effect, grants the public an interest in that use, and must submit to be controlled by the public for the common good, to the extent of the interest he has thus created " Munn v Illinois (1876), 94 U S 113 However, this legal concept is much more inclusive than the few groups designated as public utilities in financial circles

[3] There are different theories as to the basis for such legal control These theories fall into the following groups

a The right to control inheres in the public because of the governmental character of the service rendered

b The public acquires the right to control by virtue of the grant of special privileges

c The monopolistic character of the industry justifies public control as a means of protection entiates public utility and railroad investments from those of so-called private corporations Therefore, it is important for the investor to consider at some length the nature of the control exercised over public utility companies, particularly in so far as such regulation affects his problem

**The franchise explained.** Public utility companies almost invariably operate under a franchise A franchise is a contract between the public and a corporation In it are set forth the special privileges accorded the company in respect to the right to use public property, the right to acquire property under eminent domain, assurance, as a rule, that no other companies will be granted similar rights, and the length of time for which the franchise runs[4] The corporation, on the other hand, agrees to maintain regular service in the interest of the public, frequently agrees to make certain payments for the use of public property, and, in general, accepts its obligations as a public service enterprise

The method of granting franchises to public utilities has undergone some change during the present century along with other aspects of public utility economics and regulation Originally, through special enactment, legislatures granted to public service corporations the right to exist and to perform certain business (These rights are now generally conveyed through a charter, sometimes referred to as "the general franchise") Under the special enactments the public service corporation was also granted the right to use streets and highways, to erect poles, to lay gas mains, and so on (These latter rights are now conveyed through the special franchise, usually referred to as "the franchise") Somewhat later, general corporation laws were passed under which charters might be granted by state administrative agencies, whereas, for the most part, special franchises, which carried the right to use streets and highways, were placed within the jurisdiction of municipalities, either by general municipal corporation laws or by special municipal charters In fact, many state constitutions now specifically provide that no franchise giving the use of streets and highways may be granted without the consent of local authorities

As a result of the advent of effective commission control over utilities, the regulatory commission has, in many cases, been given the power of review over the acts of municipal bodies in granting franchise rights[5]

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[4] In view of the exclusive rights given to the utility company, it often agrees to maintain certain service standards and to extend its facilities to meet new demands

[5] A special example of the franchise hazard is found in the situation of the New

The conditions of the franchise under which a utility operates is of special significance to the investor Quite naturally, one of the most important features of the contract pertains to the term of the franchise or the length of time it has to run Many of the very early grants, which were secured through legislative acts, were without express limitation In such cases the courts have held them to be perpetual[6] The same situation applies to many of the earlier municipal grants In fact, where these earlier grants did run for a specific length of time, the period was generally very long—in many cases 99 or 999 years

The experience of municipalities with these long grants was not entirely satisfactory, and public sentiment quickly changed In fact, some state constitutions now prohibit perpetual grants, or else limit the life of all grants to a comparatively short period, say, from 25 to 50 years These short-time grants, however, have proved highly unsatisfactory to utility companies and are particularly obnoxious to the investor Public utility property is largely fixed and cannot easily be moved The company is therefore at a decided disadvantage in the negotiations that take place at the expiration of the franchise The company, except for the possibility of an appeal to the courts, is required to accept the terms offered by the city What else can it do? It cannot profitably refuse to operate, nor can it close up and go out of business In fact, city officials have sometimes taken advantage of their strategic position and insisted on concessions so radical as to make future operations unprofitable

The most satisfactory solution to the franchise situation that has been found is the so-called "terminable permit" The essential feature of this type of contract is the continuance of the grant, so long as the utility furnishes adequate service at reasonable rates, or until the municipality purchases the property under certain prearranged terms that give adequate protection to the investors of the company Under such a form of contract the recurrent controversies over the terms of renewal are avoided, and new financing can be undertaken without the liability of loss Such an

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York City Omnibus Corporation, a private bus system, which feels obliged to seek the consent of the city's Board of Estimate before it approaches the state's Public Service Commission for rate relief lest the city cancel its franchise The company has first to ask the city Board of Estimate for a fare increase and can count on a refusal for political reasons, since it is in competition with the municipal system, then it must take further time to obtain the Board's consent before seeking relief from the state commission *New York Times*, February 17, 1950

[6] *Re* Denver Tramway Co, 3 Fed (2d) 285, *Electric Railway Journal*, Dec 20, 1924, p 1057

arrangement became logical after the development of adequate regulation by commissions, which made unnecessary the periodic use of compulsion to obtain reasonable rates and service

Out of this form of grant has developed the so-called "service-at-cost franchise," which has been used more especially in connection with street railway companies, but also by some gas and electric companies [7] Under such franchises the terms are so arranged that charges for service are automatically adjusted in order that they shall meet as closely as possible the cost of services rendered, including operating expenses, all taxes, provision for permanent upkeep, cost of municipal supervision, and a return on the established value of the property This method of adjustment avoids recurring litigation and expensive controversy before the commission when rates require change

The operation of such a plan requires a proper valuation of the utility company, a definite understanding of what shall be included in expenses, the predetermination of a rate of return, and a provision for an automatic change of rate in the case of deficient earnings Such a sliding fare arrangement is used by the Cincinnati Street Railway Company

Sometimes, as under the Washington plan, adopted under a consent decree in 1924 for the Potomac Electric Power Company, a sliding scale of rates is provided which permits the company to share in any net income over and above the stipulated rate of return on investment Such a plan gives the company an incentive for economy, which makes for lower rates The original basic return on total investment under this plan was 7½ per cent with the company agreeing to reduce rates in the following year by one half of any excess return If, on the other hand, less than 7½ per cent return was earned for three consecutive years, or less than 6½ per cent for one year, the commission was charged with raising rates sufficient to lift earnings to the agreed basic 7½ per cent Actually, continuing rate reductions became a regular procedure

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[7] The following companies operate under this type of franchise in one form or another

Cincinnati Street Railway Co
Dallas Power & Light Co
Montreal Tramways Co
New Jersey Power & Light Co
Potomac Electric Power Co

The situation as well as the formal franchise contract must be examined The Dallas Railway and Terminal Co operates under a service-at cost franchise, effective 1917, providing for a maximum five cent fare with provisions for automatic reductions but none for increase Later this provision was declared inoperative by the Supreme Court of Texas and instead of automatic adjustment, fares are regulated by the City Council of Dallas and as economic conditions changed, the basic 7½ was lowered until in 1944 the commission found a rate of 5½ per cent to be fair and reasonable[8]

By far the more common practice is for utilities to change their customer rates not automatically but after suitable action before a regulatory commission Such regulated rates are, in effect, aimed at producing a service-at-cost system of prices, but they have the advantage of permitting the regulatory authority to examine all of the pertinent factors, such as efficiency, depreciation allowances, compensation of officers, a suitable rate of return, the amount of investment devoted to rendering service, and changing economic conditions

The investor in public utility stocks and bonds should study franchise conditions[9] Companies that operate under franchises that will expire within the contemplated period of investment may present investment risk, unless it is known that local officials and the public served are well disposed toward the company Possible hazards from difficult or burdensome requests as a condition of franchise renewal should be explored The most satisfactory situation from an investment standpoint is a company operating under a long-term or an indeterminate franchise that grants the existing corporation a monopoly in the territory A record of enlightened and equitable regulatory control that recognizes the investors' as well as the customers' interests, and of good public relations growing out of reasonable rates and good service is a valuable investment factor

**Control of monopolistic tendencies of public utilities.** In the earlier period of public utility development, competition was relied upon as the best protection against excessive rates and inadequate service Duplicate telephone systems, electric light plants, and gas companies were stimulated by the ease with which franchises could be secured from local legislative bodies and capital could be obtained from the community[10] During this period the relations that the utility companies bore to the community were not regarded as sufficiently different from those of private economic enterprises to require a different attitude, either on the part of the *entrepreneur* or of the public *Entrepreneurs* and promoters felt that they were entitled to organize, to capitalize, and to run their businesses in the manner that best served their own interests, and to make such profits as they could It was generally felt that the hazards involved in the business were no more than offset by the chances of profit

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[8] Trachsel, H H, *Public Utility Regulation* (Chicago Richard D Irwin, Inc, 1947) p 102 This Washington plan may be said to have grown from the Boston sliding scale, adopted in 1906, for regulating gas prices Barnes, Irston, R, *The Economics of Public Utility Regulation* (New York F S Crofts & Co, 1942) p 236 The recent and complicated formula used by New Jersey Power and Light Company has an additional reserve fund designed to stabilize return Foster, J Rhoads, "Two-Year Operation of the New Jersey Rate Plan," *Public Utilities Fortnightly*, Sept 12, 1946, pp 352–360 The success of the sliding scale, coupled with a provision permitting the company to share in any savings (e g Potomac Electric Power Co), is mentioned with approval as encouraging efficiency in *The Power Industry and the Public Interest* (New York The Twentieth Century Fund, 1944) p 43

[9] For further material on franchises, see Trachsel and Barnes cited in preceding footnote and Nash, I R, *The Economics of Public Utilities* (New York McGraw-Hill Book Co, 2d ed, 1931), Chapter III

Their growth as ordinary competitive concerns was soon marked by a strong trend towards combination and monopoly A common explanation given for the tendency toward monopoly in the utility field has been that a high proportion of the costs are fixed overhead costs When the direct variable costs are a low proportion of total costs, the tendency under competition is to seek additional business whenever operations are at less than capacity by offering to sell for a price that will cover the added variable costs and contribute something to the fixed burden of indirect costs The trouble with such prices is that they tend to become the prevailing prices for all business and the competitors find that their prices fail to cover the total costs In contrast, a monopoly could charge those prices that would maximize profits

Probably a better explanation of the "natural" tendency towards monopoly among the utilities has been the uneconomic duplication of investment that exists under competition plus the fact that return on that investment is a large part of the cost of the service These costs are so large that they dwarf any economies that might be induced by the spur of competition This is particularly true if we enlarge the concept of capital costs to include not only return on investment but also depreciation, insurance, and maintenance costs Note how much larger the utility investment in a given community would be if two electric or telephone companies rather than one had to place poles and wires down every street, or if two companies rather than one laid gas mains, or if two street railways rather than one built track and roadbed Monopoly permits a large reduction in capital outlay and capital costs resulting from such outlays are a large part of the total costs of the utility business

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[10] The history of public utility enterprises has been referred to as comprising the eras of (1) invention, (2) exploitation, and (3) regulation See Freeman, W W, "Evolution of Public Utilities," *Annual Report*, Investments Bankers' Association, 1916 The era of competition coincided with that of exploitation Gradually competition proved inadequate as a regulator for the industry, and regulation was substituted

A contrast is noted when we turn to a taxicab company, which, like a street railway provides a form of local transportation Whether one or five companies offer cab service in a given city, the number of cabs, and so the amount invested, to render a given volume of service will be substantially the same Furthermore, the return to capital is a much less important factor in the total cost of service than for a typical utility When we turn to real estate, we note that the investment required for residential housing is large and the element of capital return is a large part of total costs but, as in the case of cab service, the total amount of investment to give the community its housing would not be greatly different whether supplied by a monopoly or a number of competitors The factor of large investment *duplication* noted in the utility field is absent Consequently, housing is not thought of as a "natural" monopoly

Once it is apparent that monopoly has important cost advantages over competition in the utility field, the gradual drift toward monopoly and then to regulation is explainable Without the check of competition some sort of public control by which the public may be protected against inadequate service or unreasonable rates is needed The courts, therefore, have universally upheld the old common law principle that public service enterprises are subject to public control in the operation of their business

**Public utilities and the right to judicial review** There is, of course, another side to the entire question of regulation What protection have the utilities against inadequate rates? What is to prevent the legislative or administrative body, charged with regulation, from establishing rates that are unremunerative to the company and fail to yield to the owners of the business a return on their investment? There was a time, in fact, when the courts refused to offer any protection to the company in this respect, holding that the power to fix rates was a legislative rather than a judicial prerogative and that relief should be sought from the legislature, not from the courts[11]

This attitude, however, could not long persist As our industrial development continued and as legislative interference became more burdensome, the Supreme Court was required to hear a number of cases in which it was claimed that the rates established by the legislative bodies were so low as to destroy the value of the property used in the interest of the public The utility companies and the railroads contended that such rates were unconstitutional, in that they deprived the owners of their property without due process of law[12] Gradually the Supreme Court reversed its previous position and, by 1898, clearly took the position that, while the legislature had the power in the first instance to regulate rates and service, the utility company, or railroad, had the right to apply to the courts for a judicial review of the rates so established[13] As the matter now stands, therefore, the legislative branch of our government has regulatory powers over all industries "affected with a public interest," while the courts stand ready to offer protection against the abuse of such powers

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[11] This doctrine was laid down in the case of Munn v Illinois (1876), 94 U S 113 In commenting on the power of the legislature to control rates, the court here held "We know that this is a power which may be abused but that is no argument against its existence For protection against abuses by legislatures the people must resort to the polls, not the courts"

**Delegation of power of control to commissions** While the power to regulate public enterprises, in theory, rests with the legislatures, the application of regulatory policy, legislatively determined, is usually delegated to an administrative commission The Interstate Commerce Commission, which is a Federal body, has jurisdiction over all railroads engaged in interstate commerce, all pipe line, express, and sleeping-car companies, in respect to interstate business, and all truck carriers and electric railways engaged in interstate commerce In 1934, the Federal Communications Commission was created to regulate the telephone, telegraph, and radio industries, and in 1935 the Federal Power Commission was given control over the interstate electric power business In addition to this Federal control, there are state utilities commissions that generally regulate electric light and power, gas, electric railway, local telephone and telegraph, and private water companies, and other local utilities operating within a single state In 1950 every state but Delaware had some form of utilities commission although the amount of regulation varies greatly.[14] Most of the regulatory problems of the operating utility are met at the state rather than the federal level.

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[12] The fourteenth amendment to the Constitution of the United States reads in part as follows " nor shall any state deprive any person of life, liberty, or property, without due process of law, nor deny any person within its jurisdiction the equal protection of the laws "

[13] "While rates for the transportation of persons and property within the limits of a State are primarily for its determination, the question whether they are so unreasonably low as to deprive the carrier of its property without such compensation as the Constitution secures, and therefore without due process of law, cannot be so conclusively determined by the legislature of the State or by regulations adopted under its authority, that the matter may not become the subject of judicial inquiry " Smyth v Ames, 169 U S 466 (1898)

**Regulation of rates.** The earliest and the most fundamental regulatory problem that confronted the commissions and the courts was that of rate-making. The object was to protect the public against discrimination and unreasonably high rates. A fair return to the investor, on the other hand, involves, first, the determination of the value of the property employed to render the service, and, second, the fair rate of return to be earned upon that value. At first little concern was felt by commissions for the position of the investors. But recognition of the need for fair treatment of the investor became evident as a means of insuring a flow of capital that would provide the needed utility services. As soon as the courts decided to protect the utility investor against confiscation, the valuation problem became most important.[15] The earning power allowed determined, in turn, the market, or commercial, value of the securities owned by the investor.

**Peculiar aspects of public utility valuation.** It is evident that the method of appraisal used in the valuation of public utility properties for rate purposes must differ from that used in the appraisal of the property of industrials. In the former case, it is impossible to give much, if any, weight to market value, for market value is dependent to a large extent on earning power, which in turn varies with the rates allowed. If, therefore, market values were used as the basis for determining the rates a public utility should be allowed to charge, we should really be begging the entire question, since market value itself depends largely on the very rates it is desired to test.

For this reason it is necessary to use a different basis for valuing public utility property for rate-making purposes. The two bases now most commonly used are: actual, or original, cost of construction, and cost of reproduction (or reproduction cost, as we shall use the term). The term "actual," or "original," cost is generally employed to include the original cost of the property used for utility purposes (including an allowance for working capital as well as fixed property), with the cost of subsequent additions and betterments added, and retirements and abandoned property deducted From this sum an allowance for depreciation will be subtracted Minor variations of this general practice are sometimes advocated Advocates of cost usually agree that extravagant or unnecessary expenditures should not be included in the valuation, and adopt a standard which they term "prudent investment" It may be argued that retired property may be carried for a time as a part of investment until written off out of earnings The term "reproduction cost" or "current value" is employed to designate the cost of reproducing the property new From this figure it is customary to deduct an allowance for depreciation The claims made for and against these different bases of valuation will be considered in some detail

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[14] For a detailed chart showing regulatory bodies and their jurisdiction and powers, see p. 288. The District of Columbia, which has a commission, is also included in the chart. Puerto Rico and Hawaii also have commissions.

[15] For a good treatment of the valuation problem in connection with public utilities, see Bauer, John, and Gold, N., *Public Utility Valuation for Purposes of Rate Control* (New York: The Macmillan Co., 1934). Also see Barnes, *op. cit.*, Chapters XI–XIV, XVI–XVII.

**Methods of valuation· original, or actual, cost basis** The merit of the original, or actual, cost basis lies in the fact that it represents, as nearly as possible, the actual sacrifice of the investors After all, is this not the real amount on which a fair return should be allowed? Can the courts or commissions be called upon to go further than this in giving protection to the investor?

It is true that original cost as a basis for determining the fair value of utility property for rate-making purposes has much to commend it On the other hand, it is not without weaknesses The first difficulty arises from the fact that it takes no cognizance of fluctuating prices The first two decades of the century witnessed a very substantial increase in the general price level Is a company that was established during that period to be allowed a return on the basis of construction costs at that time? Such a situation would undoubtedly prejudice some investors against the industry if prices were rising, even though the constant replacement that normally goes on tends to correct matters It would also result in widely different rates for the same type of service, depending upon costs at the time a particular plant was erected

Another possible objection to original cost may lie in the practical difficulties of applying it It sometimes happens that the accounting records of a company are lost or that they are inadequate Occasionally repairs and maintenance expenditures have not been properly differentiated from additions and betterments Difficulties become less when the accounts have been kept over a period of years on a uniform basis and under the supervision of a reasonably vigilant commission Where doubt exists as to the accuracy of records, a condition that prevailed more commonly prior to the first World War, valuation has often been necessary to provide a starting point It is easier from an administrative point of view to arrive at and agree upon a valuation based upon costs determined by carefully kept accounting records than upon frequent revaluations made upon the basis of changing reproduction cost

**Reproduction cost defined** The term "reproduction cost" has generally been used to imply the cost of reproducing the property new on the basis of current prices, or on the basis of averaging prices over a period of, say, five years The plant under consideration is usually assumed to be reconstructed from materials and equipment in every respect the same as those used in the construction of the actual plant, although under certain conditions it is necessary to consider the cost of erecting a substitute plant of similar capacity, the so-called "replacement cost basis "[16]

During the period preceding 1910, various commissions urged the use of the cost-of-reproduction basis on the grounds that the public was entitled to enjoy the benefits of lowered costs, and that charges for service should be based on existing and not past costs The general price level had been falling from the end of the Civil War until 1896 Between 1910 and 1930, however, the situation was reversed, and the public service corporations strongly urged the use of the cost of reproduction basis for valuation The reaction of prices and their violent fluctuations after 1930 have left the companies less assured in their arguments and more willing to accept the certainties of original cost

**Arguments for and against reproduction-cost theory.** In general, the arguments in favor of cost of reproduction are based on the claim that the public is entitled to service at a rate of charge sufficient to pay a fair return on the investment currently necessary to furnish the service, while the company is entitled to a fair return on the capital investment that another company would have to make under current conditions to provide the service

Undoubtedly there are reasons for considering fluctuations in value under certain conditions, but the logical outcome of a strict application of the cost-of-reproduction theory would inevitably result in an unearned, or unmerited, gain or loss either to the consumer or to the investor This situation should definitely be avoided, so far as possible, in rate cases The ultimate desideratum in public utility valuation is a rate that allows a fair return to the investor on the sum invested and a fair rate to the consumer, based on the original cost of erecting the property If the investor is to be protected, therefore, against declining prices, why should the consumer not be protected against increasing values, especially where the increase in property values may be largely conjunctural, developing out of the normal growth of the community?[17]

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[16] In Hartman, H H, *Fair Value* (Boston Houghton Mifflin Co, 1920), p 100, cost of reproduction theories are classified as follows (1) the cost of reproducing a plant, similar in all essentials to the existing plant, under present conditions, (2) the cost of reproducing a similar plant at present prices, under conditions prevailing at the time of original construction, (3) the cost of constructing a substitute plant capable of performing the same service 'Cost-of reproduction-new—less depreciation,' sometimes spoken of as a fourth form of the theory, is but the application of depreciation rules to the inventory "

Opposed to this argument, of course, is the argument based on the decline in the purchasing power of money caused by rising prices To limit the return on public service property, say, to prices in the past when they were much lower, would be to fail to maintain a *status quo* for the investor in such property if his investment were figured in terms of commodities The more fortunate investor who committed his capital to industrial securities, on the other hand, would find himself in a far more favorable position, in that he would be able to profit from an increase in property values However, in so far as the rate of return and the principal of bonds and preferred stocks are fixed in nearly all cases, this argument applies only to the common stockholder The reproduction-cost basis would, in a period of rising prices, offer no aid to the bondholder and preferred stockholder suffering from diminishing purchasing power, but would return large gains to the common stockholder, especially when his equity was small in relation to the appreciating property In a period of falling prices, the common stockholder might be completely wiped out and the investment position of the prior securities would be injured, if not actually placed in jeopardy of default

In seeking funds from the investor public in the form of common stock, the utility employing original cost rather than reproduction cost can do two things (1) During a period of rising commodity prices, the regulatory commission aware of the problem may permit the utility to earn a somewhat higher return for the common stock so as to compete with the allurement of rising industrial common stock earnings (2) The prospective investor will also consider the uncertainties of inflation and appreciate the stabilizing influence of an original cost investment base that will not permit his equity to vanish in any ensuing deflation

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[17] *Re* Franklin Light & Power Co (N H), P U R 1922 A "It would seem unreasonable to mark up or down the valuation of all of our electric and other plants to correspond to the fluctuations in the cost of materials and labor, especially in such abnormal times as these A permanent change in values may fairly be considered, but there is a pretty general feeling that money prudently invested should be reasonably secured against sudden or other reductions in values, and of course it would be equally objectionable to raise values to match fluctuations in cost of material and construction" (p 514)

**Depreciation in connection with reproduction cost** In considering the cost-of-reproduction theory, we cannot neglect the problem of depreciation There are, in fact, two distinct lines of thought as to the proper method of handling depreciation Some have advocated a strict application of the cost-of-reproduction-new basis without any allowance for depreciation These persons have held the theory that, so long as the service performed by the utility is as good as when the utility was new, it is immaterial to the consumer to what extent depreciation of individual property has occurred[18]

Such an argument had considerable appeal in the period before systematic depreciation was recorded, but when depreciation is properly charged against earnings we have a different situation The meaning of the term depreciation is clear it is a recognition of the imperceptible, immeasurable decline in value that sets in at the time of purchase and continues until the capital instrument is retired to the inevitable scrap heap To be sure, there may be no appreciable lessening of its efficiency until, say, the tenth year of its existence, when, suddenly, it becomes worthless Nevertheless, in performing its service during these ten years, it has been yielding up value to the goods or services produced, and against the income should be charged yearly amounts, so that at the end of ten years the business will have recovered amounts equal to the original investment, less whatever scrap value exists after the instrument is abandoned, if it assumed consumers should pay enough to cover all the operating expenses, including depreciation

As applied to a public service plant, the propriety of charging depreciation against earnings is no longer questioned This statement is merely another way of saying that the consumer is expected to pay a sufficient amount, assuming a fair return is earned over expenses, to return the value of property used up in providing the service rendered When such investment is paid for by the consumer, he should no longer be expected to pay a return upon it But if, as is usually the case, the funds representing depreciation reserves have been turned back into the plant as additions and betterments, then these funds should be added to the depreciated value of the original plant, in order that they may continue earning a return for the investors in the company[19] The funds represented by the depreciation allowance may, however, be invested in other nonoperating property, so that they may earn an independent return or be used to retire outstanding securities of the operating company

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[18] This theory, now chiefly a matter of historical interest, may be reviewed in Humphreys, A C, "Depreciation, Estimated and Actual," *Proceedings of the American Gas Institute*, Vol VIII, Part II, p 521, Blood, W H, "The Passing of 'Depreciated Value' in Rate Bases", and Webster, Geo N, *Theoretical Depreciation, a Menace to the Public and the Investor*

**Present attitude toward reproduction cost.** Until about 1933 it was generally believed that regulatory commissions were required under the Smyth v Ames decision of the Supreme Court to give some weight to reproduction cost in arriving at fair value of the investment used by a utility Some attorneys representing public service corporations strove to interpret this case to mean that "present value" should be taken as the only value The language of the court on this point in Smyth v Ames, already quoted, was as follows "And, in order to ascertain that value [fair value for property used for the convenience of the public], the *original cost of construction,* the amount expended in permanent improvements, the amount and market value of its bonds and stocks, the *present as compared with the original cost of construction,* are all matters for consideration "[20] Lest anything might have been overlooked, the court added "We do not say that there may not be other matters to be regarded in estimating the value of the property "

With such a general basis laid for variation, it is scarcely surprising that during the 1920's, one can find varying emphasis upon original cost, or historical cost, or prudent investment, on the one hand, and upon current, or reproduction, cost, on the other[21] Although no formula existed for weighing these two different bases, there always was the possibility that a court decision might alter the ruling of a commission if it did not give some weight to both A turning point was reached when the Supreme Court permitted the California commission to adhere to the "historical-cost" base and ignore reproduction cost in the case of the Los Angeles Gas & Electric Corporation in 1933[22] Essentially the decision gave the commissions as established by the state legislative authorities rather wide discretion in the methods to be employed, limiting the Court's function to relief in case the rates set should be so low as to be confiscatory of the utility's property It constituted a limit to the sphere of activity of the judicial branch as distinguished from that of the legislative branch as represented by the commission

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[19] For a discussion of the purpose of depreciation accounting, see Barnes, *op. cit*, pp 258 ff

[20] The italics are ours

[21] For an account of these various cases, see Barnes, *op cit*, Chapter XI, "The Present-Fair Value Concept of the Courts", also page 504 for a summary of the predominant valuation base in 363 commission cases in the years 1920–1923

[22] Los Angeles Gas & Electric Corporation vs Railroad Commission of California (289 U S 287, 1933) The continuing development of the idea may be followed in Lindheimer vs Illinois Bell Telephone Co (292 U S 151, 1934), Railroad Commission of California vs Pacific Gas & Electric Co (302 U S 388, 1938), and Federal Power Commission vs Hope Natural Gas Co (320 U S 591, 1944)

In consequence, the thorough investor must study the regulatory attitude of the individual state commissions on this matter of valuation policy and other related problems that bear on fair return Such study assumes a degree of consistency that will persist through changes in the personnel of commission Actually some changes will occur over the years A fair generalization would be that the general idea of original-cost-less-depreciation as a valuation method has gained steadily in acceptance since the early 1930's both by commissions and utility management, even though important exceptions may be found[28] This trend is chiefly explainable in terms of (1) the steady improvement in accounting practices, (2) the recognition of the need for a stable investment base for the heavy volume of bond and preferred stock financing in the utility field, and (3) easier and more certain administration of regulation under the original cost approach Whatever loss of glamor is suffered by the utility common stock under this method during inflation may well be counterbalanced by a gain in long-run stability The influence of the commission in the financially important state of New York and of the Federal regulatory bodies has been in the same direction With so much invested in plant during the era of high prices after World War II, utility management is also likely to feel it has a large interest in maintaining a stabilized rate base that the investor can identify with balance sheet values under commission-approved accounting

**Treatment of certain tangible and intangible items in utility valuation** Up to this point, our discussion has centered on the particular aspect of value that should be adopted Still other problems must be understood if the investment literature on utilities is to be understood

While it is true that little doubt exists as to the propriety of including as elements of value those tangible items that were necessary to the public service corporation, and that were acquired at an actual cost, questions do arise as to the propriety of including other tangible items, as well as some intangible items, in arriving at the rate basis

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[28] The commissions of such important states as Ohio, Pennsylvania, Illinois, and Indiana have used rate bases giving substantial weight to reproduction costs For a brief discussion, indicating adjustments made by states holding to original cost, see Owen Ely "Various Ways of 'Rationalizing' Electric Rate Increases," *Public Utilities Fortnightly*, July 7, 1949, p 40

1 *Unused property* For instance, it is generally held that property that is not used or is not useful, even though acquired at a cost, may not be included in arriving at values for rate-making purposes[24] The theory underlying this attitude is that the public should not be required to pay rates high enough to provide a return on an unnecessary investment, or to recoup the public service company for mistakes in judgment Property that is superseded but is still useful as stand-by equipment for meeting emergencies may be continued as a part of investment The actual use of such property under the stress of war and postwar conditions during the 1940's strengthened the case for the inclusion of such property

2 *Property acquired by gift* Essentially the same attitude has been taken in respect to tangible property acquired by gift and without cost Such property, although necessary, represents no sacrifice, no investment, and no cost to the company until replacement is necessary Consequently, such property should be excluded from the rate base[25]

3 *Property acquired from surplus* Another interesting problem is created in respect to property acquired from surplus Should such property be regarded as acquired from large earnings, and hence as representing no sacrifice from investors, or should it be considered as a reinvestment of the stockholders' earnings? In general, earnings once realized are not subject to what amounts to retroactive rate-making by denial of reasonable return in later years on investment Management might have dissipated any such return as dividends to stockholders of the past Similarly, past losses cannot ordinarily be used by the utility to enhance the rate base[26]

4 *Overhead costs* Other questions regarding the valuation of specific types of tangible property naturally arise, but our analysis has gone far enough to show that the courts and the commissions usually seek to include only those items that, on the one hand,

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[24] See particularly *In re* LaCrosse Gas & Electric Co, 8 W R C R 138, *In re* Darlington Electric Light & Water Power Co, 5 W R C R 397, San Diego Land & Town Co v Jasper, 189 U S 439, 23 Sup Ct 571, 47 L Ed 892

[25] While some earlier decisions favored the inclusion of such items, later decisions have adopted an opposite view See San Diego Water Co v San Diego, 118 Cal 556, 50 Pac 633, Ashland v Ashland Water Co, 4 W R C R 273, Pine Lawn v W St Louis Water & Light Co, (Mo) P U R 1917-B, 679

[26] Board of Public Utility Commissioners vs New York Telephone Co, 271 U S 23, 31 (1926)

actually represent an investment by the public service corporation and, on the other, are usually employed in the business

Other questions of interest center on the inclusion or exclusion of such items as engineering costs, superintendence, contingencies, contractors' profits, interest during construction, legal and general organization expenses, and promotion costs These items, ordinarily classed as overhead expenses, are generally allowed by state commissions, where it can be proved that they were actually incurred and where they were not excessive Likewise, the additional expense involved because the utility company was necessarily constructed in piecemeal fashion may be regarded as a legitimate item of cost

5 *Intangibles* (a) *Franchises* Franchise values, on the other hand, are classed as intangibles While allowed in valuation for taxation, and frequently in valuation for purchase and sale, they are not generally considered in arriving at values for rate-making purposes beyond the actual cost of acquiring the franchises[27] (b) *Going value* Another intangible item met in discussion of public utility valuation is "going value" or "going concern value" Utility companies have sometimes contended that allowance should be made in regulatory valuation for a sum in addition to the mere physical value of the property to include a certain intangible element of value that is considered to exist because the concern is operating, has a clientele, and is actually running There are, in fact, several aspects of this question that must be treated differently, as going value is not always used to cover precisely the same thing

Where going value is considered as arising from expenditures necessary to secure new business, such expenses, if actually incurred and charged to capital, may be included Among such costs might be included operating deficits, and failure to earn a normal return on investment in the early years of operation But where such charges were not incurred, or were met out of operating expenses, obviously to include them in the rate base would be tantamount to duplicating the charge against future consumers Even the development-cost idea has been rejected in opinions of the highest court as unnecessary with the argument that even though it takes time and may cost operating losses to reach financial success, which may not be reached at all, this constitutes justification for allowing a liberal return on the money invested rather than for adding development costs as an element of the valuation [28]

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[27] For further discussion and citation of relevant cases on overhead costs and intangible values, see Barnes, *op cit*, pp 439–452, and 452–474, respectively

(c) *Goodwill* That aspect of going value that is based on goodwill cannot legitimately be allowed unless an actual expenditure has been involved to secure it Goodwill, as generally used to indicate an element of value derived from the fixed and favorable consideration of customers, has no place in rate making, since the customers usually have no option in placing their patronage

**Valuation for purposes other than rate making** It would take us too far afield in our present problem to discuss all the points of difference between valuation for rate purposes, for capitalization, for purchase, and for taxation Generally, however, the following distinctions may be said to exist In valuations for rate purposes, what is sought is a fair value upon which to base a fair return And fair value has, with the exception of certain increases in value, been used to imply at least an investment or sacrifice on the part of the owners of the public service corporation Valuation for capitalization will be substantially the same as valuation for rate purposes if the securities outstanding have adequate earning power to support their value Valuation for tax purposes, on the other hand, tends more closely to conform to market value, and, where earnings are low, may be considerably less than fair value for rate purposes In spite of the tax law, local assessment practice may place considerable emphasis upon depreciated replacement cost rather than market value Tax laws differ widely and the bases of appraisal are many Valuation for purchase, while closely related to valuation for rate purposes, is also different [29] There are grounds here for leaning strongly toward the capitalization method of value, or at least for taking into account the market value of the property as being the product of two variables—cost and rates [30]

**A fair return on fair value** Closely related to the problem of the valuation is the question What constitutes a fair return? The determination of a rate base is of little consequence unless it is known what net return should be allowed on it For steam railroads, in the early 1920's a return of 5¾ per cent was considered by the Interstate Commerce Commission (under mandate from Congress) to be a fair return The courts and state commissions, on the other hand, have been somewhat more liberal in the case of the public utilities as may be seen from the accompanying table showing averages of actual rates of return allowed in rate cases of electric, gas, and telephone utilities.

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[28] Galveston Electric Co vs Galveston, 258 U S 388, 395–396 (1922)

[29] See Willcox v Consolidated Gas Co, 212 U S 19, 29 Sup Ct 192, 53 L Ed 382, Omaha v Omaha Water Co, 218 U S 180, 30 Sup Ct 615

[30] See Fuhrmann v Cataract Power & Conduit Co, 3 N Y P S C (2d Dist) 656

AVERAGE RATES OF RETURN ALLOWED IN RATE CASES[81]

| *Year* | *Electric* | *Gas* | *Telephone* |
|---|---|---|---|
| 1925–1929 | 7.24 | 7.63 | 7.02 |
| 1930–1934 | 6.86 | 6.90 | 6.69 |
| 1935–1939 | 6.26 | 6.41 | 6.27 |
| 1940–1944 | 5.88 | 6.22 | 5.72 |
| 1945 | 5.83 | 6.47 | 5.90 |
| 1946 | 5.50 | 6.06 | 6.07 |
| 1947 | 5.50 | 5.70 | 5.75 |
| 1948 | 5.79 | 5.81 | 5.89 |

The late 1920's showed a range of returns between 7 and 8 per cent, the 1930's between 6 and 7 per cent, and during the 1940's characteristic return declined below 6 per cent for the first time. This downward drift was made possible by the declining rate of return needed to raise funds from the sale of bonds and preferred stock. In an increasing number of rate cases after 1947, regulatory commissions showed a slight tendency to allow an increase. The change reflected appreciation of the need for a return sufficient to make the common stock attractive so as to permit balanced financing of the huge postwar capital requirements of the utilities.

Again, it should be recalled that there is no guaranty or assurance that a particular company will earn a fair rate on its investment. The only protection actually afforded to the investor in utility companies is the assurance that the company, under normal management, will be allowed, within reasonable limits, rates that will provide a fair return on the fair value of property used for the public good. In periods of changing business conditions, rate adjustments may be so slow as to cause this general rule to fail. Furthermore, a utility may, through overextension or unusual losses of business to competing substitute industries, be unable to earn a fair return under any scheme of rates.

**Other problems of regulation.** It is easy to see how the protection afforded public utility companies by the courts in the matter of rates and valuations gave rise to other problems of regulation that called for a widening of the commissions' powers to include more than rate-making activities It is true that neither the courts nor the commissions have ever stood ready to sanction unreasonably high rates, even though such rates might be necessary to give a fair return on property investment Nevertheless, in view of the accepted idea that a reasonable return should be allowed, where possible, it appeared logical to give the commission power to authorize extensions to existing plants, to determine whether a new plant should be permitted to enter the field, to regulate security issues, and to approve consolidations and mergers In other words, since a company must be permitted, where reasonably possible, to earn a fair return once it is in the field, why should not the commission be permitted to determine, before any investment is allowed at all, whether there is sufficient need for its services at fair rates to assure a fair return? The same argument applies to extensions of present plants Since they are supposed to permit a fair return, should not the commissions have power to regulate the issue of securities that are to be sold to the public and for which the public looks to the commission for adequate earnings? Since earnings may be accurately or inaccurately stated according to the methods of accounting employed, in many cases the commissions are given power to prescribe the methods by which accounts shall be kept On the basis of this reasoning, therefore, a gradual extension of the powers of utility commissions has taken place over the entire field of public control The status of the commission control as it is now customarily exercised will be considered briefly

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[81] Figures for 1925–1937 from Federal Communications Commission, Telephone Rate and Research Department, *Factors Underlying the "Rate of Return" in Public Utility Regulation*, p. 61, for 1938–1948 supplied through the courtesy of the *Public Utilities Fortnightly*. The earlier figures were compiled from cases reported in *Public Utilities Reports*, and should be studied to note differences between states and special circumstances in particular cases. These earlier figures are also available in Barnes, *op. cit.*, p. 534.

**General discussion of powers of commissions.** Regulation of *local* utilities is distinctly a state, not a Federal, function Accordingly, one expects to find a wide variation in the powers granted in the different states[32] While practically all state commissions are granted authority over rates, and many states are also given the power to determine valuation for rate-making purposes, only twenty-four commissions have authority in all four of the closely related matters, namely, valuation, rates, service, and capitalization It is further observed that, while nearly all of the states do, or may, require privately-owned properties to make reports of financial operations, only a very few publish these reports In connection with rates, proceedings may usually be initiated upon petition of customers or utilities, and sometimes upon the commission's own motion The commission's function is to conduct hearings and, after considering all the facts, to grant rates that are reasonable to the public and allow a fair return on the fair value of the property owned by the utility and used in the public interest The question of fair value is closely connected with that of rate structures, and today rate cases generally involve questions of valuation that are considered simultaneously

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[32] In recognition of the desirability of improvement and uniformity, a Uniform Public Utilities Act has been approved and promulgated by the National Conference of Commissioners on Uniform State Laws The act is the joint product of the National Association of Railroad and Utilities Commissions and the Public Utility Law Section of the American Bar Association

Another important function usually performed by the commission is that of prescribing and enforcing proper standards of service Thus, for electric railway companies, commissions are given the power to prescribe the frequency of car service, the number of seats per car, braking and other safety equipment to be installed, conditions of operation, and so forth For electric and gas companies, the service, such as voltage regulation, the B T U content of gas, and proper tests for meters, is regulated Some commissions prepare and publish elaborate rules and regulations, regarding not only the preceding matters, but also the standards and character of property construction, the adjustment of interference problems in connection with high-tension transmission lines, specifications for grade crossings, and other matters that are related to efficient and continuous service

As commission control has been extended to cover matters of rates and valuation, it has been found necessary to include, under regulatory functions, the control of accounting methods Accordingly, many commissions are empowered to establish standard accounting systems for all utilities under their control The purpose of this standardization is to secure uniformity in the annual reports made by utilities to the commissions Without such standardization accurate comparisons over a period of years would be impossible Furthermore, the use of standard systems of accounts prevents misrepresentation through manipulation of the accounting for reserves, depreciation, retirements, and additions and betterments In some cases commissions are empowered not only to establish standard accounting systems, but also to prohibit the maintenance of any other systems of account or memoranda This power is expressly granted to the Interstate Commerce Commission

About 36 commissions have specific jurisdiction over the securities issued by utilities When a utility company wishes to issue long-term securities, it is required to file with the commission a statement of the character and amount of the issue, the purposes for which the proceeds are to be used, available income, data relative to present capitalization, values, and so on The approval of the commission is then required before the securities can be sold A number of states require that securities be sold by competitive bidding Exemptions may be permitted, especially in the case of common stocks, which may be sold by giving rights to existing stock holders or negotiating a sale with investment bankers

While the legal theory is that a fair rate is one that will allow the utility company to earn a fair return on its operating utility property, there is no guaranty that such a return will be earned, or that the promised interest or dividend rate will be earned on any given issue of bonds or stock Nevertheless, regulatory commissions often feel a certain responsibility toward the security holders in companies over which they have regulatory powers It is a logical extension of power, therefore, to include control over the matter of security issues When the commission is empowered to pass on or to approve a given security issue, it is then in a position to check the purposes for which it is to be used, the amount of the proposed issue with respect to present earnings and assets, and the probable need for the extensions that are to be financed out of the proceeds of such issues

It is customary to require the utility company, before it can undertake operations within the state, to apply to the commission for a certificate of convenience and necessity If no other similar utility is already operating within the region to be served, and if the applying company offers promise of successful operation, the certificate is granted However, if the territory is already adequately served by an existing company, in a manner reasonably satisfactory, and at reasonable rates, usually the petition is denied Here legal sanction is given to the economic law, already discussed, that utilities are natural monopolies Under normal conditions one company can serve the community better and more economically than can several, provided that intelligent control prevents the company from charging unreasonable rates or from rendering inadequate service by virtue of its monopoly This general principle was violated, however, by the New Deal policies of the Federal Government, which tendered low-cost loans to municipalities in order that they might establish competing plants without subjecting the questions of the fairness of existing rates or the adequacy of existing private plants to the study of either regulatory commissions or judicial review

Figure 12 Summary Chart Showing Jurisdiction of State Commissions Over Public Utilities

| State or District | JURISDICTION EXTENDS OVER OPERATIONS OF PRIVATELY OWNED COMPANIES | | | | | | SPECIFIC ENACTMENTS AUTHORIZE COMMISSION REGULATION OF PRIVATELY OWNED ELECTRIC AND GAS COMPANIES AS TO | | | REPORTS OF FINANCIAL OPERATIONS OF PRIVATELY OWNED ELECTRIC AND GAS PROPERTIES | | | AUTHORITY INCLUDES REGULATION OF MUNICIPAL ELECTRIC PLANTS AS TO | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Electric Light & Power* | *Gas* | *Street & Interurban Railways* | *Motor Vehicles, Bus* | *Water* | *Telephone & Telegraph* | *Authorized to Make Valuation* | *Rates* | *Issue of New Securities* | *Accounting Methods Prescribed* | *Open to Public* | *Published by Commission* | *Rates* | *Service* | *Accounting* |
| 1 Alabama | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | No | No | No |
| 2 Arizona | Yes | Yes | No | Yes | Yes | Yes | Yes[e] | Yes | Yes | Yes | Yes | No | No | No | No |
| 3 Arkansas | Yes | Yes | Yes | Yes | Yes | Yes | Yes[ad] | Yes | Yes | Yes | Yes | No | No | No | No |
| 4 California | Yes | Yes | Yes | Yes | Yes | Yes | Yes[e] | Yes | Yes | Yes | No | Yes | No | No | No |
| 5 Colorado | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | Ltd | Ltd | Ltd |
| 6 Connecticut | Yes | Yes[1] | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | No | No | Yes |
| 7 Delaware | Commission created after compilation of Table | | | | | | | | | | | | | | |
| 8 Dist. of Columbia | Yes | Yes | Yes[3] | Yes | No | Yes | Yes | Yes | Yes | Yes | No | No | No | No | No |
| 9 Florida | No | No | Yes | Yes | No | Yes | No jurisdiction over electric and gas companies | | | | | | No | No | No |
| 10 Georgia | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | No | Ltd | Ltd | No |
| 11 Idaho | Yes | Yes[1] | Yes[4] | Yes | Yes | Yes | Yes[e] | Yes | No | Yes | No | No | No | No | No |
| 12 Illinois | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | No | No | No |
| 13 Indiana | Yes | Yes | Yes | Yes | Yes | Yes | Yes[d] | Yes | Yes | Yes | Yes | No | Yes | Yes | No |
| 14 Iowa | Ltd | No | Yes[4] | Yes | No | No | No jurisdiction over electric and gas companies | | | | | | No | No | No |
| 15 Kansas | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No | No | No | No |
| 16 Kentucky | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | No | No | Ltd | Ltd | No |
| 17 Louisiana | Yes | Yes | Yes | Yes | No | Yes | Yes[ae] | Yes | Yes | Yes | Yes | No | No | No | No |
| 18 Maine | Yes | Yes[1] | Yes | Yes | Yes | Yes | Yes[d] | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| 19 Maryland | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes |
| 20 Massachusetts | Yes | Yes | Yes | Yes | Yes | Yes | Yes[ae] | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |
| 21 Michigan | Yes | Yes | Yes[4] | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes | No | No | No | Yes |
| 22 Minnesota | No | No | St Ry -Ltd | Yes | No | Yes | No jurisdiction over electric and gas companies | | | | | | No | No | No |
| 23 Mississippi | No | No | No | Yes | No | Yes | No jurisdiction over electric and gas companies | | | | | | No | No | No |
| 24 Missouri | Yes | Yes | Yes | Yes[5] | Yes | Yes | Yes[de] | Yes | Yes | Yes | Yes | Yes | No | No | No |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | Montana | Yes | Yes | Yes[3] | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | No | Yes | Yes | No |
| 26 | Nebraska | Ltd | No | Yes | Yes | Yes | Yes | No | Rural | Yes | No | No | No | Ltd | Ltd | No |
| 27 | Nevada | Yes | Yes | Yes | Yes | Yes | Yes | Yes[b] | Yes | No | Yes | Yes | No | Yes | Yes | Yes |
| 28 | New Hampshire | Yes | Yes[1] | Yes | Yes | Yes | Yes | Yes[e] | Yes | Yes | Yes | Yes | No | No | No | Yes |
| 29 | New Jersey | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Ltd | Yes | Yes |
| 30 | New Mexico | Yes | Yes | No | No | Yes | No | Yes | Yes | Yes | Yes | Yes | No | No | No | No |
| 31 | New York | Yes | Yes | Yes | Yes | Yes | Yes | Yes[e] | Yes | Yes | Yes | No | Yes | Ltd | Yes | Yes |
| 32 | North Carolina | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | No | No | Yes |
| 33 | North Dakota | Yes | Yes | Yes | Yes | Yes | Yes | Yes[a] | Yes | Yes | Yes | Yes | No | No | No | No |
| 34 | Ohio | Yes | Yes | Yes | Yes | Yes | Yes | Yes[bc] | Yes | Yes | Yes | No | No | No | No | Yes |
| 35 | Oklahoma | Yes | Yes | Yes | Yes | Yes | Yes | Yes[e] | Yes | Yes | Yes | No | No | No | No | No |
| 36 | Oregon | Yes | Yes | Yes | Yes | Yes | Yes | Yes[a] | Yes | Yes | Yes | Yes | No | No | No | No |
| 37 | Pennsylvania | Yes | Yes | Yes | Yes | Yes | Yes | Yes[d] | Yes | Yes | Yes | Yes | Yes | Ltd | Ltd | Ltd |
| 38 | Rhode Island | Yes | Yes | Yes | Yes | Yes | Yes | Yes[a] | Yes | Yes | Yes | No | Yes | No | No | No |
| 39 | South Carolina | Yes | Yes[1] | Yes | Yes | Yes | Yes | Yes[c] | Yes | Yes | Yes | Yes | No | Ltd | No | No |
| 40 | South Dakota | No | No | Yes | Yes | No | Yes | No jurisdiction over electric and gas companies |  |  |  |  |  | No | No | No |
| 41 | Tennessee | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | No | No | No | No |
| 42 | Texas | No | Yes[1] | Yes[4] | Yes | No | No |  | Yes — for natural gas only |  |  |  |  | No | No | No |
| 43 | Utah | Yes | Yes | Yes | Yes | Yes | Yes | Yes[a] | Yes | No | Yes | Yes | No | No[6] | No[6] | No[6] |
| 44 | Vermont | Yes | Yes[1] | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes |
| 45 | Virginia | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | No | No | No | No |
| 46 | Washington | Yes | Yes | Yes | Yes | Yes | Yes | Yes[e] | Yes | Yes | Yes | Yes | No[2] | No | No | No |
| 47 | West Virginia | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | No | Yes | Yes | Yes |
| 48 | Wisconsin | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes | Yes |
| 49 | Wyoming | Yes | Yes[1] | Yes[4] | Yes | Yes | Yes | Yes | Yes | No | Yes | No | No | Yes | Yes | Yes |

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[1] Manufactured gas but not natural gas except for Texas and Wyoming where reverse is true

[2] Except statistical summaries

[3] Street railways — yes interurban — no

[4] Street railways — no, interurban — yes

[5] Only where the major portion is outside a municipality

[6] Except outside of cities

Source Moody s *Manual of Investments, Public Utilities*, 1949, p a66

[a] Prudent investment (In Oregon favored but not prescribed )

[b] Reproduction cost

[c] Present value

[d] Fair value

[e] Original cost

Figure 12 (pages 288–289) shows, in a general way, the scope of commission jurisdiction in the states at the present time

Although commissions have been given broad regulatory powers in respect to utilities, they have not been delegated managerial powers That this distinction be maintained is important If regulated utilities are to grow and to continue to meet the demands for their service, they must be made to retain full responsibilities for such service A division of responsibilities between commission and company would be fatal In fact, various courts, even the Supreme Court of the United States, have held that commissions cannot lawfully assume managerial functions and responsibilities that inhere in private ownership and operation [38]

**Significance of regulation to investor** The significance of this situation to the investor in public utility securities may now be more fully explained In the first place, it is evident that public utility enterprises occupy a position of unique importance in economic life They supply basic necessities, usually under monopolistic conditions Frequently the monopoly they enjoy is the result of a direct grant of the legislature On the other hand, they are subject to public control, which limits the return they may earn Yet, there is an implied contract with the public that charges will be authorized to permit a fair return on the fair value of property used for public service Consequently, the investor expects, and generally finds, that the earnings of utility companies, while steady, are limited There is a reasonable assurance that a fair return will be earned on securities outstanding, in so far as there is no overcapitalization On the other hand, the investor no longer looks to the securities of public utility operating companies for the large speculative profits that occasionally come from commitments in industrial securities

Furthermore, the extension of the powers of public utility commissions to cover such matters as the right of new companies to enter the field, the issuance of new securities, extensions to existing properties, and accounting afford the investor in public utilities a certain amount of protection not found among industrial securities Where the utility is located in a state with intelligent commission regulation, there is at least a presumption in favor of the soundness of its underlying securities, bonds, and preferred stocks that may even be extended to the common stock of the company

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[38] "So far as appears, plaintiff in error's board of directors has exercised a proper discretion about this matter requiring business judgment It must never be forgotten that, while the state may regulate with a view to enforcing reasonable rates and charges, it is not the owner of the property of public utility companies and is not clothed with the general power of management incident to ownership" *Re* Southwestern Bell Telephone Co , 262 U S 276, P U R 1923 C, 193, 200

**Property values and earnings in relation to values.** When valuations of the assets of a public utility have been made and have been accepted as the rate base by the regulating commission, they afford the investor a fairly good check on the book value of the assets, as well as on the supporting basis for the stocks and bonds that the company has outstanding Where such appraisals indicate that primary emphasis is laid upon current reproduction value rather than upon original cost, the dangers of a falling price level should be remembered In states with the original cost or prudent investment basis for valuation and a regulated accounting system, the rate base will often coincide with the book value of the operating assets The question of property values is of far greater importance for public utilities than for industrials In the latter case, security values depend largely on earning power, which results from charges regulated by competition only. The real worth of an industrial plant is determined by what it can earn year in and year out The extent of physical assets may occasionally prevent the value of its securities from going below certain levels, but the dearth of extensive physical assets will not prevent its common stock from rising to high levels, where earnings so warrant On the other hand, in view of the close relationship between the earnings and asset values of public utilities, a relationship reinforced by legislative and judicial control, it is apparent that the market value of securities outstanding should bear some relation to the fair value of the actual property owned

**Guaranty of fair return** Regulation, however favorable to the utility, in no wise affords a guaranty that a fair return will be earned by any given company on its property investment The existence of regulation does not serve to abolish all economic hazards Even though a given enterprise is protected from the competition of like concerns, there still exists the constant possibility of competition from the use of substitutes One of the best examples of such competition is found in the increased use of personal automobiles and taxis at the expense of electric street and interurban railway and bus systems Other forms of competition by substitution can readily be recalled The development of electricity as a means of lighting at one time threatened the gas industry, although the latter has developed sufficient new business in industrial and domestic heating fields to offset the increased use of electricity in the lighting field

**Economic hazards in utility operation.** Further hazards to which utility companies are subjected are economic in nature Rising production costs require increased rates Yet, increased rates may discourage consumption to such an extent that operating revenues will remain constant or even decline On the other hand, public utility enterprises have many fixed costs, so that expenses cannot be reduced readily as business declines Net earnings, therefore, are not always controlled through the rates allowed Another factor that may reduce earnings is a decline in the population of a community Consequently, it is very necessary that the investor be familiar in a broad way with conditions in the territory in which he invests his funds

**Regulation as an investment factor.** The regulation to which public utilities are subjected may react unfavorably on the investor There is no doubt that the railroads of this country were treated unfairly by the Interstate Commerce Commission from 1910 to 1920 Rates were kept at relatively low levels despite rising costs The same situation occasionally has prevailed in respect to public utilities in certain states One must always consider the possibility that regulatory bodies may lean in favor of the people from whom they derive their power rather than toward the companies they regulate This tendency was less in evidence during the decade 1921 to 1930 than ever before As the depression deepened in the succeeding years, pressure was brought to bear upon regulatory bodies to reduce rates in order that they might be "brought into line with other lowered prices" without too much regard for the general principle of "fair return" or the limitation upon the return of utilities in good times During the inflation years that followed World War II, rising costs created for the telephone, manufactured gas, transit, and railroad industries a financial problem that commissions were sometimes slow to solve by higher rates [34] Lower unit costs resulting from expanded use and fuller utilization of investment permitted the electric utilities to meet inflation with relatively few and small rate increases

Inadequate earnings hinder adequate service by making financing difficult, especially in the case of common stock issues Commissions generally recognize the desirability of fair treatment for the investor However, they dislike to make rate increases even when those increases are less than price level increases Commissions feel the greatest need for equitable treatment when the given company needs adequate earnings to support financing for expansion Differences in treatment among the various states are a matter of investment interest The investor will also look into the possibilities of hostile regulation and the possible influence of Federal encouragement to municipal competition, especially in the areas in the vicinity of Federal water power projects

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[34] For an account of the inflation troubles of the utilities that occurred *during* as well as after World War I, see Bernstein, E M, *Public Utility Rate Making and the Price Level* (Chapel Hill University of North Carolina Press, 1937)

**Economics of public utility operation: capitalization and output** A comparison of sales to total investment for manufacturing companies often shows that ratio running in the neighborhood of one By contrasting such a figure with those of typical utility companies, where the investment ordinarily runs between three and five times its annual gross revenues, one is impressed with the heavy capital requirements of the utility industry Approximate estimates of the relation between plant investment and value of output for leading types of utility are as follows

RATIO OF PLANT INVESTMENT TO OPERATING REVENUES

| | *Total (Gross) Plant* | | | *Plant Less Depreciation* | | |
|---|---|---|---|---|---|---|
| | *1937* | *1940* | *1948* | *1937* | *1940* | *1948* |
| Electric light and power[a] | 6 5 | 5 7 | 3 7 | 5 7 | 5 2 | 2 9 |
| Telephone (Bell System)[b] | 4 3 | 4 0 | 3 3 | 3 1 | 2 9 | 2 3 |
| Gas [c] | | | | | | |
| Manufactured | 5 4 | 4 8 | 2 9 | 4 8 | 4 0 | 2 2 |
| Natural—distribution | 3 0 | 2 5 | 2 1 | 2 4 | 1 9 | 1 6 |
| Natural—transmission | 3 8 | 3 8 | 3 9 | 3 1 | 2 9 | 3 0 |

[a] Federal Power Commission, *Statistics of Electric Utilities in the United States*
[b] *Moody's Manual of Investments, Public Utility Securities*
[c] American Gas Association, *Gas Facts*, 1949

Formerly the gross plant figures were much closer to those for net plant after depreciation because the reserves for depreciation were much lower than today In the more recent years, as shown in table, the depreciation deduction has run from one fifth to one third of gross property, the higher fraction being found only in the telephone industry Since the age of the properties and so the accumulated depreciation varies from company to company, the ratios based on gross property are usually deemed to be more fairly comparable among the members of a given utility field The net property, however, is significant as the amount of investment, when added to the relatively small working capital, upon which fair return is ordinarily allowed and which constitutes the supporting base for the outstanding bonds and stocks

In reading the table, the influence of a rising price level should be kept in mind Higher prices mean higher operating costs and so higher revenues to cover those costs The plant continues at fixed original cost at the lower price level until it is replaced Only as replacements or additions at the higher level of prices occur does the ratio tend to return to "normal"

The inclusion of hydro as well as steam plants in the ratios for the electric light and power industry tends to raise the ratios shown As between the manufactured and the natural gas distributors, the fact that the latter have no, or very little, investment in production facilities will tend to give the former a higher ratio of investment to revenues Behind the natural gas distributor stands the considerable investment in pipeline transmission companies and that of the gas producers Mixed companies would be expected to show varying ratios between those shown for manufactured and natural gas

Except for the natural gas companies, the situation of the utilities differs from that of the typical industrial company in that the latter carries on only one step in the process of manufacturing and distribution to the ultimate consumer

Consider, in this respect, the various operations performed in the conversion of iron ore into a finished automobile Similarly in the textile industry, the raw product often passes through several stages before it emerges ready for final consumer use In the electric light and power industry, on the other hand, the entire process is often consummated at one step However, many gas companies have in recent years purchased from natural gas companies an increasing proportion of the gas they have sold The cost of materials forms a much smaller proportion of total output in most public utility enterprises than in typical industrials

**The load factor** There is still another reason, however, why the capital requirements of utilities are high in relation to output This condition is due to the fact that, in the nature of the case, the plant and distribution facilities are not fully utilized at all times The degree of capacity utilization is usually measured and expressed as the "load factor" This term may be defined for a given station as the ratio of the average load to the peak load during the period—in other words, as the ratio of the average rate of output during the year to the maximum demand at any instant or for some very short period of time during that year.

**The load and capacity factors.** When the capital, or other fixed costs are an important element of selling price, the extent to which facilities can be fully utilized will have an important bearing on unit costs The plant and distribution facilities can never be fully used throughout the 24 hours and every day in the year The actual load factor is the ratio of the average load to the peak load during the period of measurement This ratio can be found for a year or for a given day The capacity factor is measured by the ratio of average load or output to the capacity of the plant to produce Because a utility will try to have some margin of reserve capacity over peak load, the load factor will be a higher per cent than the capacity factor Some margin, perhaps 10 to 15 per cent, over peak load is felt necessary to provide against contingencies and unexpected growth Interconnected systems and expanded service areas have served to improve capacity utilization

The increased ability of the electric utilities to improve utilization in recent years may be seen in the accompanying table The depression of the early 1930's lowered the capacity factor from 35 per cent in 1929 to 26 per cent in 1932 With business recovery the factor rose to 40 per cent in 1940 and to a peak 57 per cent in 1948 The inability of plant construction to keep pace with demand in the postwar business boom resulted in load outrunning capacity so that normal margins over peak load disappeared

UNITED STATES PRODUCTION OF ELECTRIC ENERGY
AND CAPACITY OF GENERATING PLANTS

| *Year* | *Installed Capacity—Dec 31* (Thous of Kilowatts) | *Annual KWH Generated* (Millions) | *Annual KWH per Kilowatt of Capacity* | *Capacity Factor* (Dec Capacity) |
|---|---|---|---|---|
| 1929 | 29,839 | 92,180 | 3,089 | 35 3% |
| 1932 | 34,387 | 79,393 | 2,309 | 26 3 |
| 1940 | 39,927 | 141,837 | 3,552 | 40 4 |
| 1948 | 56,464 | 282,594 | 5,005 | 57 0 |

Source *Statistical Bulletin* of Edison Electric Institute Federal Power Commission figures

The remarkable progress in improving load factor is described by Commonwealth Edison Company in its annual report (1949)

> In early years, use of electric service by customers of the companies was confined largely to lighting and street railways The nature of these loads was such that for many hours of the day and night a large part of available generating and distribution capacity was idle This meant that the investment in plant was not being fully employed Over the years, an ever increasing use of electricity in commerce and industry, in the home and on the farm, has served to make possible a more efficient utilization of our plant facilities. Recently, the broader use of electricity within the major classes of our customers has placed a greater around-the-clock and throughout-the-year load on the system plant
>
> Twenty years ago, the annual system peak occurred customarily at 5 00 p m on a dark, cold winter day The morning load at that time of year was usually only three fourths as great as the late afternoon peak Likewise, the summer peak was generally less than three fourths

of the following winter peak While the system peak still occurs late on a winter afternoon, winter morning loads are only slightly less than winter late afternoon peaks, and summer peaks approximate 90 per cent of winter peaks This means that more of our plant is working more hours of the year than in the '20's and '30's or even in the early '40's Annual output per kilowatt of average capacity rose from 3,500 kilowatt hours in 1929 to 5,500 in 1949

The comparatively level and sustained load of this company on a day of peak demand is shown in Figure 13 While the daily peak is still seen between 5 and 6 p m , the load from 8 a m to 10 p m is remarkably level The average load of 1,656 megawatts (millions of watts) was 70 9 per cent of the peak of 2,337 megawatts. Demand ran so close to capacity during the postwar years that some utilities enlisted the cooperation of major industrial users to curtail their use during the period of peak demand

The same general principle applies as well to other utilities Streetcar companies must have sufficient equipment and operating force to meet early-morning and late-afternoon demands for service, although a substantial part of this equipment may be idle during the remainder of the day Gas companies must be able to supply sufficient gas to meet household requirements at meal hours for cooking and during the coldest winter weather for heating, although demand may be much lower at other times Water companies are subject to even greater variations in demand, especially since they must provide for fire protection as well as for normal uses

Such variations in the demand for utility services have a twofold significance for the investor In the first place they explain in part the apparently heavy capital requirements of such enterprises Furthermore, they furnish the investor with a partial guide to the efficiency with which the plant investment is being used The smaller the variation between average and maximum output, the more effective the employment of the investment in a given utility and the lower average rates needed to produce a fair return on investment

**Rate structures.** Since the utility is limited in the rate of return it may earn, an ideal rate structure is one that enables the company to produce a maximum output and still earn that return In seeking this end, the utility company endeavors, among other things, to increase its load factor At first glance it might appear that rates for service should be the same for all consumers Such uniformity in rates, however, would be unfair as well as uneconomical There is a wide difference in the production cost of the various units sold, depending on the quantity sold to a given customer, the regularity or continuity of service, the time at which the service is required, and so on

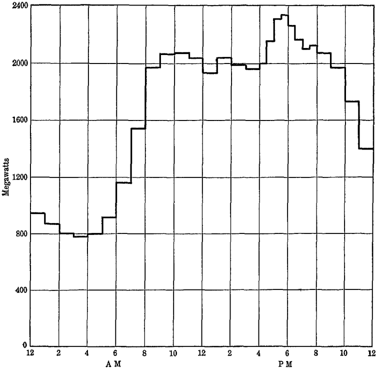

Figure 13 Load Factor Illustration Electric Power Load for Commonwealth Edison System, December 27, 1949

In considering first the problem of rates in the electric light and power industry, let us refer briefly to Figure 13 This chart shows that the load on the station was much lower during the night hours between 10 p m and 8 a m If some industrial user, such as a manufacturer of ice, could be induced to concentrate his power purchases during this period, the management would be justified in selling current at a substantially lower rate than during the other hours In fact, it would be possible substantially to ignore capital costs in devising rates to stimulate the use of power during certain hours of the day, so long as so-called increment, or out-of-pocket, expenses were met and a profit was shown, that is, so long as the utility company has its investment built up to meet the peak load The addition of customers whose use of current can be restricted definitely to certain hours will require no additional capital investment. On the other hand, customers who make further demands on the capital facilities of the company, because of the nature of their business, should be charged a higher rate.

Looking at the problem in another way, one observes that a consumer having a 40-horsepower motor in use two hours per day uses as much power as another consumer with a 10-horsepower motor that is used eight hours a day. Yet it takes four times as much capital to supply the first user as the second, a fact that should be taken into account when rate structures are established. A proper structure will account for the fixed charges required to furnish a given service as well as for the operating expenses which vary in proportion to the time during which the power is used.

A given rate structure, then, may or may not adhere strictly to the usual cost-of-service idea, which regards all units of a uniform product as of equal cost. Adjustments in power rates must be made to meet competing sources of power. Power rates may vary for different concerns, depending on continuity of use, time of maximum load, and the rate that can be put into effect without causing the use of competing sources of power.[85]

Although there are different types of industrial power rate structures in use, they are likely to include two, or possibly three, basic elements. (1) a demand charge based upon the maximum consumption during any 15- or 30-minute period during the month, (2) an energy charge that is based upon actual total consumption, and (3) sometimes a service charge. The demand charge is based upon the principle that the company is obliged to assume certain costs in order to care for the maximum demand, whether the customer uses the service or not. The energy charge covers the additional costs that arise if the service is used. Both forms of charge decline as the demand or use increases. These prices also vary according to whether they apply to regular service or strictly off-peak service [86]

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[85] It must also be kept in mind that the demands of customers are diverse, and that their maximum instantaneous demands do not coincide. This is a determining factor in the adjustment of plant capacity to meet demand. This diversity is often expressed and measured by what is called the diversity factor. If a group of concerns so operate that their maximum demands do not fall at the same time, the maximum station load resulting from such service will be less than the total of the maximum demands of individual customers. The diversity factor may be defined "as the ratio of the total of the maximum demands of individual customers occurring at any time during a given period to the maximum station load resulting from such service at any time during the same period." See Nash, L. R., *Economics of Public Utilities* (New York. McGraw-Hill Book Co., 2d ed., 1931), p. 268.

Lighting and domestic rates are adjusted at a point that reflects the principle of joint-cost product pricing The competition of alternatives is felt less here than in the case of power service, with the result that, in the past, domestic rates have often been so adjusted that the return therefrom, together with other revenues, constituted an adequate return on invested capital after payment of operating expenses In recent years, however, the tendency has been to lower domestic rates in order to stimulate greater use of electric energy for household accessories, particularly those used during the day [87]

In the gas industry somewhat similar problems arise, although the general practice here is much simpler than in the electric light and power field Formerly gas was generally sold at a flat rate per thousand cubic feet used, regardless of the amount of the customer's consumption, a practice that ignored the fact that the large customer might represent no greater investment in main, meter, and office overhead than the small one [88] Currently, however, the tendency is toward a reduction in charges when gas is used in volume for heating Industrial users are sometimes given a very low rate for gas on an "interruptible basis," that is, a supply that can be reduced or shut off when the demands of high-rate customers expand

Telephone companies often charge flat rates for home telephones, although such a charge does not fully reflect the cost of service to the individual subscriber Furthermore, telephone rates for residential subscribers are usually lower than rates for business telephones, even though the capital investment for the former service is usually greater The reason for this anomaly is that the business telephone is a necessity and must be had regardless of cost The residence telephone is not a necessity and its use is stimulated only by means of a low rate Such a rate appears to follow the old principle of charging what the traffic will bear, but probably is justified by the greater use of the business telephone The system of toll rates and the use of prepayment telephones approach the cost-of-service principle, although the practice of lowering the toll rate during evening hours to stimulate the use of facilities after the time of peak load recognizes the principle that, so long as out-of-pocket expenses can be met and a slight profit shown during periods of limited use, it is better policy to stimulate demand than to allow facilities to remain idle

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[86] For further analysis, see Troxel, Emery, *Economics of Public Utilities* (New York Rinehart & Co , Inc , 1947), p 608

[87] See Cabot, Philip, "Studies in the Household Market for Electricity," *Annalist* Nov 18, 1927, p 779

[88] Where the large consumer's use involves a larger instantaneous demand, an additional investment in main is required

Rate-making for local electric railways and buses has been subject to experimentation Rising costs of operation and the increased use of automobiles have created a real problem for such companies In contrast to the European practice, where zone fares have been in general use, the American practice has been to charge a uniform fare for urban transportation regardless of distance However, some attempts have been made to institute the zone system In such cases the plan has been to narrow the urban area and to zone the surrounding area by belts, varying in width, at which points a supplementary fare is charged Generally speaking, such attempts have not been successful

The local transportation problem has been made acute by the loss of traffic to the private automobile Fare increases may fail to increase revenues because they drive away business The tendency has been for the motor bus to be substituted for the electric street and interurban railway because of lower capital costs and greater efficiency where traffic is light

**Customer ownership of public utilities.** The ownership of public utilities may rest either in the municipality, in the hands of stockholders—some possibly absentees—or of the customers of the utility itself through extensive stock ownership Municipal ownership of public utilities, while not uncommon in this country, is not the general rule [39] The important exception to this statement is the water works, which is generally owned by the community served

There is considerable feeling in this country that municipal ownership of utilities, particularly electric light and power, gas, and transit enterprises, is likely to be uneconomical The opportunity for mismanagement and waste is opened, and, there is little incentive for technical improvements It is too easy, under public ownership, to cover up deficits, or to make them up from taxes

Where there is absentee ownership of a utility, the stock being held by so-called "banker," or "Wall Street," interests, there is always the possibility of misunderstanding and controversy In the early history of public utility development, when investment values were not stabilized, it was natural that outside, or business, capital should have been largely used The customers of utilities financed in this manner suspected that exorbitant profits were going to unknown owners, and the groundwork was thus laid for unsatisfactory public relations

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[39] The city of Seattle has operated an electric system since 1904 In 1919 it purchased the Seattle Transit system The major part of the present Detroit street railway system was purchased from private owners in 1922 The city of Cleveland operates a lighting plant which does about 13 per cent of the electric light and power business in Cleveland The city of Los Angeles purchased, in 1922, the local distributing system from the Southern California Edison Company, which it operates in connection with municipally owned hydroelectric plants

Customer ownership was first undertaken in a large way by light and power companies In 1920 about $43 million of the securities of such companies were sold to customers In 1925 sales of securities to customers reached the peak figure of $298 million In the later years of the decade declines occurred, so that 1930 sales were about $135 million It is estimated that over $1 billion worth of securities, one fifth of the total investment in the industry, was sold to customers and employees during the decade 1921 to 1930[40] Most of this stock sold was preferred stock When the great holding companies were broken up under the Public Utility Holding Company Act of 1935, many operating company common stocks became available for direct investment for the first time Some companies have sought to encourage the ownership of their common stock locally

Local ownership tends not only to strengthen the financial position of a utility company, but also to lessen the risk of undue lowering of revenues by regulatory authorities Nevertheless, no utility of any size can overlook the advantage of creating as wide a market as possible for its securities to facilitate financing It might, however, direct its attention to developing common stock ownership within the area of its operations as a part of a public relations program designed to lay a foundation for fair consideration of the investor, as well as the consumer, interest by regulatory authorities

**Tests of utility development capital costs** As previously suggested, the ratio of the cost of public utility properties to operating revenues generally ranges between 4 to 1 and 5 to 1 Such measures of cost, however, lack dependability because of wide variations in rates and the development of business in different areas More accurate measures of cost may be obtained by reference to the standard units of operation for different utilities For electric railways, the mile of track is a unit, for electric companies, the power station kilowatt capacity, while for the gas company the unit of measurement is the plant capacity, or annual product

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[40] *Electrical World*, January 3, 1931, p 73

Even with these measures it is dangerous to generalize regarding the capital costs that should apply at any time to different companies Not only are such costs affected by changes in the price level, but conditions vary widely in different localities, customer density, physical characteristics, industrial development, and wealth, all have their effect on the capital cost of erecting a utility plant With these difficulties in mind, it might be estimated that the present cost of urban steam electric power properties will probably range between $250 and $450 per kilowatt of station capacity Both electric and gas utility investment per unit of capacity may be reduced by the purchase of power or gas from other companies

**Adequacy of facilities and extent of use** The investor is interested not only in the capital costs of a particular utility, but also in the ability of the company to furnish adequate service to the community and in the extent to which the company's facilities are being used The best measure of the facilities of an electric light and power company is its power station capacity per 1,000 of population served The availability of electric service is measured by the ratio of meters to population

Another measure of market development is found in the number of kilowatt hours sold per annum per capita This ratio will vary with the extent of industrial development, the rates in effect, and the purchasing power of community, as well as the promotional ability of the utility Average annual sales per capita have risen from 609 kilowatt hours in 1930 to 899 units in 1940 and 1,649 in 1948[41]

The development of facilities by a gas company is commonly measured by determining the number of miles of main per unit of population served, usually in terms of 1,000 of population Granted that the conditions found in different communities vary widely, the normal range may be said to fall between 1 5 and 2 miles per 1,000 of population In large cities it is often necessary to convert the actual mains into the equivalent of 3-inch main for comparison The number of meters per 100 of population and the amount of gas consumed per capita will indicate service development[42]

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[41] *Electrical World,* January 30, 1950, p 100

[42] *Ibid,* pp 346–349 Nash suggests a range of between 15 and 25 for meters per 100 of population and consumption of between 5,000 and 9,000 cubic feet per capita However, gas sales have roughly tripled in the years since he wrote, amounting to 3,485 billion cubic feet in 1948 *Gas Facts*—1948 (American Gas Assn New York, 1949), p 106

**Holding company control.** Just as a great consolidation movement took place among American railroads between 1890 and 1910 which built a multitude of roads into integrated systems, a similar development took place in the electric and utility field but culminated later during the decade of the 1920's While interconnection and physical integration resulted, often a single system embraced geographically separate and unrelated properties A major part of the industry came under the control of a relatively small number, approximately a score, of giant holding companies, which often created a number of subholding companies between themselves and a galaxy of operating companies While the financial system of the electric holding companies often encompassed widely separated properties, actual interconnected systems were regional or less

The chief advantages that the holding company system brought to the isolated operating companies were

1 *Operating* (a) Interconnections of contiguous properties made possible the construction of large and more economical generating plants and an enlarged service area that permitted improved load factors (b) Engineering talent and other expert services were made available on a cooperative basis that would have been unavailable to the smaller unit

2 *Financial* Assistance in financing the rapid expansion of the electric industry up to 1930 was important The holding company was especially effective in supplying the relatively difficult-to-obtain common stock funds Equity money has generally been a problem, except for the major companies serving metropolitan areas

Certain abuses also characterized the utility holding company movement These were brought forcibly to the public eye by the investigations that followed the financial collapse of a few of the holding companies that had employed debt in the holding company structure[43] During this period of criticism and condemnation, banker control was excoriated regardless of whether that control had been beneficial or otherwise The public temper was such that faults were underscored and the advances of the industry ignored

A chief object of criticism was the profits that were made through the control of these systems during the 1920's by trading in properties, underwriting profits in the sale of securities, and fees for services to operating companies The pyramided holding company arrangement permitted the control of huge corporate empires with a minimum of investment in the controlling common stock of the topmost holding company The bulk of the funds for conducting the business was obtained from huge issues of bonds and preferred stocks issued by the holding company, subholding companies, and the operating companies Large rates of profit resulted from such heavy trading on their common stock equities during prosperity These profits disappeared in the stock market debacle of 1929–1933

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[43] For critical studies of the holding company see Bonbright, James C, and Means, Gardner, C, *The Holding Company, Its Public Significance and Its Regulation* (New York McGraw-Hill Book Co, 1932), and Waterman, M H, *Financial Policies of Public Utility Holding Companies* (Ann Arbor Bureau of Business Research, University of Michigan, 1932)

The other major criticism was of the "write-ups" of utility property as it was transferred from one company to another, often between parts of a single holding company system The practice made easy the deception of the investor and the confusion of the regulatory commission, and created a basis for overcharges to the consumer public To obtain historical perspective upon this practice during the pre-reform era, certain points must be kept in mind (1) The principle of original cost to the original builder of the property had not at that time been widely accepted Many deemed fair value to be the current replacement value regardless of book value When the write-up occurred at the time of transfer from one corporation to another, current fair value was regarded as not unreasonable However, no evidence shows a nice regard for exact reproduction, or fair, value in this write-up Promoters in the later years often paid very high prices to capture desired properties (2) Promoters during this period of weak regulation and doubtful standards for regulatory practice, took the position that, as in the unregulated field, they were entitled to profits that they might make by combining properties, improving technology, and giving only a share of the resultant savings to the consumer public in the form of reduced rates (3) Practices among the different systems varied greatly A few followed sound practices and received a clean bill of health On the general principle that a happy marriage is less newsworthy than a scandalous divorce, they recived little publicity On the other hand, the extreme cases of bad practice found in the cases of a few of the more latterly founded systems suffered the most disastrous crashes when the depression came These were the bad boys who became for many an example of what they believed characteristic of the industry For such, no recognition was accorded the declining rates to consumers, advances in the art of producing and transmitting electricity, nor the tremendous expansion of service with its implications for an improving standard of living

The Public Utility Holding Company Act of 1935 drove hard at the abuses of the holding company set-up Save where purely intrastate, they were placed under the control of the Securities and Exchange Commission Under the "death sentence" provision of the Act, the breakup of these financial giants was required Only a single group of properties that could be integrated into a single, regional, interconnected system could be retained Any pyramid of holding companies had to be reduced to a single holding company (Certain exceptions were possible under the law, but were rarely allowed in practice ) The investor has benefited from (1) the simplification and strengthening of capital structures, (2) the improved accounting and financial reports, and (3) the elimination of a number of abuses that, although principally of concern to the consumer, created investment hazards that naturally flow from less than fair treatment of the public with its explosive political potentialities Fair customer treatment lays a basis for, even though it does not guarantee, good public relations The latter, in turn, makes for greater investor safety

Before severance from the holding company system, local operating companies typically had their capital structures improved, where necessary, to insure sound subsequent financing Common stock equities were built up sometimes by contributions from the holding companies, sometimes by recapitalizations that reduced the preferred stock claim Similarly, debt was retired typically by repayment rather than reorganization where it appeared unduly high in relation to property While some of the resultant independent companies have been small, the bulk of the properties have been combined into networks sufficiently large to give reasonable prospects of operating efficiency and ability to finance growth

More will be said about the analysis of holding company securities in the next chapter

**Position of public utilities as investments** Viewing public utility securities as a class, they must be accorded high standing There are exceptions, to be sure, notably in the transit industry, but on the whole, the record of public utilities has been most favorable

The stability of utility investments arises partly from the nature of the industry and partly from the existence of public control The fact that utilities frequently operate under monopoly conditions eliminates many of the hazards of competition that beset the ordinary industrial Furthermore, utilities operate with a minimum of investment in inventories, a fact that enables them to escape the dangers of inventory fluctuation The credit risk, with the somewhat analogous danger of order cancellation, is lacking in the public industry, a further reason for stability in earning power Consumers are either required to pay cash, as in the case of street railways, or else are rendered monthly statements that must be paid promptly, otherwise service will be discontinued Finally, the necessity of the service that they render enables utilities to gauge demand over a period of years and to plan extensions in an intelligent manner

In view of the stability of high-grade public utility operating company securities as investments, it is but natural that the bonds of such utility companies should have become legal as investments for life insurance companies, savings banks, and trust companies As early as 1916 the Investment Bankers Association actively sponsored a uniform savings bank law designed to legalize investments in public utility bonds[44] With the passage of time, most of those states that set legal standards for the investments of such institutions have admitted utility bonds and sometimes utility preferred stocks to the legal list

The yield on public utility bonds during the twenty years prior to 1928 averaged from 1 per cent to 1½ per cent higher than the yield on high-grade municipal and railroad bonds There was, however, a distinct tendency toward a decrease in this differential The growing popularity of utility bonds as investments, the crystallization of ideas on commission control, and the growth in the number of states legalizing public utility bonds for trust funds and savings banks investments were responsible for this tendency. During and since 1928, yields on public utilities and railroads have fluctuated to such a degree that first one group and then the other has been selling on the higher basis, while municipals have continued to sell on a distinctly lower basis than these other two classes. As a result of the relative stability of utility earnings during the trying period 1930–1934, the yields of the best-grade utility bonds have since that time fallen to the level of the choicest liens in any corporate division, although remaining higher than the return on tax-exempt municipal issues. (See Figure 5, page 116.)

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[44] *Bulletin Investment Bankers Association of America*, 1916, Vol V, No 2 It is interesting to note the prerequisites there proposed in respect to the selection of legal public utility bonds In substance these may be described as follows

1 It is assumed that gross property values will normally be between 4 and 5 times gross revenues

2 Net earnings should be 1¾ times charges

3 On this basis, if it is assumed that a normal operating ratio will be between 50 and 60 per cent, charges should range between 23 and 30 per cent of gross

4 The company should have at least $500,000 of gross earnings, except telephone companies, which should have $1,500,000

5 Not more than 10 per cent of gross should be obtained from one customer

6 Franchises should be satisfactory

7 Investments should be limited to operating companies

8 Securities should be a direct lien upon property, except where collateral consists of an issue of first mortgage bonds

In more recent years, these standards have gradually altered with the common investment standard for coverage of interest and operating ratios rising, and charges becoming a lower per cent of gross revenues Hydroelectric power companies, as described in the next chapter, have characteristically lower operating ratios.

While the discussion of specific kinds of utilities in the next two chapters will reveal what sharp distinctions exist among subtypes, an idea of their relative performance as compared with that of the other classes of corporation and foreign (corporate and government) bonds during the more recent period of trying depression may be obtained from the following table of defaults.

BOND DEFAULTS IN THE UNITED STATES 1924–1939*

(Amounts in Millions of Dollars)

| | Public Utility | | Railroad | | Industrial | | Real Estate | | Foreign | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Year* | *No* | *Amount* | *No* | *Amount* | *No* | *Amount* | *No* | *Amount* | *No* | *Amount* |
| 1924–1930 | 185 | 333 | 50 | 348 | 293 | 598 | 280 | 271 | 4 | 36 |
| 7-Year Aver | 26 | 48 | 7 | 50 | 42 | 85 | 40 | 39 | 1 | 5 |
| 1931 | 96 | 202 | 30 | 213 | 216 | 444 | 705 | 557 | 28 | 632 |
| 1932 | 132 | 593 | 37 | 202 | 287 | 699 | 544 | 544 | 69 | 581 |
| 1933 | 109 | 364 | 76 | 1,088 | 238 | 482 | 312 | 416 | 127 | 1,105 |
| 1934 | 38 | 150 | 44 | 310 | 76 | 206 | 77 | 83 | 11 | 257 |
| 1935 | 24 | 149 | 53 | 762 | 39 | 92 | 31 | 47 | 5 | 9 |
| 1936 | 5 | 28 | 33 | 233 | 27 | 59 | 16 | 27 | 5 | 35 |
| 1937 | 8 | 58 | 26 | 141 | 14 | 124 | 15 | 13 | 3 | 67 |
| 1938 | 21 | 107 | 45 | 401 | 19 | 23 | 16 | 12 | 11 | 64 |
| 1939 | 9 | 118 | 7 | 72 | 21 | 51 | 13 | 27 | 3 | 13 |

* Standard Statistics Co., *Standard Bond Investments*, December 23, 1939, p. 875

The amount of defaults should be read in the light of the total volume of debt in each class. These totals in 1930 were approximately as follows: public utilities, $14 billion, railroads, $11 billion, industrials, $10 billion, real estate bonds, $5 billion, and foreign, $7 billion.[45] The bulk of the utility bond defaults were in the traction field and among the holding companies. In the two worst years, 1932 and 1933, traction, or electric railway, defaults accounted for one half and one third of the totals, respectively Defaults among operating electric light and power, manufactured gas, and telephone operating company issues have been negligible [46]

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[45] Clark, Evans (Editor), *Internal Debts of the United States* (New York: The Macmillan Co., 1933). See also Harwood, E. C., "Wealth *vs* Debts," *Barron's*, February 19, 1934.

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[46] Further analysis of these defaults may be found in Horton, Donald C, "Railway and Public Utility Bond Defaults, 1929–34," *Survey of Current Business,* July, 1935, pp 16–18

## 11

# Investment Analysis of Special Classes of Utilities

On account of the wide differences found between the various types of public utilities, such as electric light and power, gas, telephone and telegraph, water, and transit companies, it will be necessary, in developing the subject of investment analysis as applied to utilities, to devote some independent discussion to each of the more important of these groups.

### Electric Light and Power Securities

**Recent growth.** We shall consider first electric light and power companies. The growth of this industry has indeed been one of the outstanding phenomena of the present century. Some idea of the magnitude of this development may be had by reference to certain pertinent statistics regarding the industry, as shown in the following table.

RECENT GROWTH OF CENTRAL ELECTRIC STATIONS[1]

| | *Population (Millions)* | *Customers (Millions)* | *Kilowatt hours Generated (Billions)* | *GNP* 1935–1939 ($ Billion)* | *FRB† Index* |
|---|---|---|---|---|---|
| 1927 | 118.6 | 19.7 | 70.9 | 79.4 | 95.0 |
| 1947 | 144.9 | 31.7 | 208.1 | 144.2 | 187.0 |
| % Increase | 22 | 61 | 194 | 82 | 97 |
| % Increase per year compounded | 1.00 | 2.40 | 5.60 | 3.03 | 3.45 |

* Gross National Product in dollars at 1935–1939 price level
† Federal Reserve Board Index of Industrial Production

These figures avoid the distortion of dollar figures subject to inflationary influences. Even the gross national product figure has been reduced to dollars with a purchasing power equal to that in the years 1935–1939. Power generated in this 20-year period rose at a compounded annual rate of 5.6 per cent. Over the 40-year period, 1889–1929, the increase in horse-power (electric capacity) per worker grew at a four per cent rate. Between 1920 and 1940 the index of kilowatt hours (electric usage, as in column 3) per man hour increased at a 9.3 per cent rate compounded.[2] In industry these figures meant relief from backbreaking human effort and increased productivity, in the home, a rising standard of comfort.

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[1] *Electric Utility Financing* (New York: Ebasco Services, Inc., 1948), p. 5.

**Causes for recent development.** The principal causes for this growth are already familiar to most of us. Electricity has rapidly supplanted gas and kerosene as a means of illumination for the home, not only because of its greater convenience, but also because of greater safety and economy. Later a flood of household appliances, such as the refrigerator, the vacuum cleaner, and the washing machine, came on the scene and their use is still expanding. Home entertainment in the form of radio and television also uses electricity. Industrial uses for electricity have likewise been widely extended. Many manufacturing concerns that formerly operated their own independent power plants have found it more economical to abandon these and to purchase electric power from central stations.[3] Industrial use of power has been further accelerated by reason of the ease with which individual motors can be connected directly with the operating machines in a factory. In this way electric energy is transmitted through the plant by means of wires and transformed into effective driving power directly at the machine. The use of cumbersome belts and shafting, with consequent loss of power through friction by the private steam power plant is thus eliminated.

Despite the phenomenal growth that has already taken place in the electric light and power field, it appears that the industry has by no means reached its limit of expansion. Quite independent of the normal development that may be expected to take place as population increases, it can hardly be assumed that the *per capita* consumption of electricity has reached its limit. Even though the proportion of industrial power supplied by utility central stations should not grow, increased per capita production should result in increased power purchases. Farm consumption has spread rapidly until estimates indicate 85 per cent of occupied farms have electric service as compared with 95 per cent of all occupied dwellings (1949)[4] Residential consumer use has made remarkable increases From an annual average consumption of 444 kilowatt hours in 1927, the figure rose to 839 in 1938 and 1,529 in 1948 In the meantime average cost per kilowatt hour fell from 6 80 cents to 4 20, then 3 06 cents in these years[5] Potential growth can be seen in the expanding list of appliances and other home uses[6]

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[2] *Ibid.*

[3] It is estimated that in 1909, 9.4 per cent of manufacturers' equipment was operated by purchased electric power, in 1939, 67.7 per cent; in 1946, 70.1 per cent. *Ibid.*, p. 9.

**Stability of earnings in electric light and power investment** From the standpoint of stability of earnings, the electric light and power industry is especially favorable to the investor The annual gross revenues of electric utilities have shown almost continuous growth, showing only a 12 per cent decrease even in the difficult depression of 1930–1933[7] Defaults among electric light and power operating company securities have been especially low As previously suggested, for a period of thirty years prior to World War I, the risk of receivership per $100 of securities outstanding for industrial concerns was $2 07, for railroads, $1 84, and for public utilities, $ 37 Later figures show that during the six-year period 1924 to 1930, 185 issues of public utility bonds, having a total value of $333,061,964, were defaulted, while 50 issues of railroad bonds, amounting to $348,015,490, were defaulted In the four depression years 1931–1934, 187 defaulted railroad issues totalled $1,813,126,348, while 375 defaulted utility issues amounted to $1,309,035,684 The ratio of defaulted public utility bonds to total outstanding public utility securities was somewhat lower than the ratio for railroads, since during this period the volume of public utility securities gained rapidly, and in 1930 exceeded that of total outstanding railroad securities by approximately $2 billion[8] The later failures in the utility field

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[4] Abrams, Ernest R , "Electric Expansion to Slacken, Natural Gas Speeded," *Barron's*, January 16, 1950, p 15

[5] Electrical Utility Financing, *op cit* , p 29 Federal Power Commission, *Statistics of Electric Utilities in the United States, 1948*, p XIV

[6] Estimated kilowatt hours consumed per year by various appliances old and new

| | | | |
|---|---|---|---|
| Radio | 90 | Refrigerator | 350 |
| Electric blanket | 125 | Home deep freezer | 625 |
| Television | 264 | Electric cooking range | 1,050 |
| Oil Burner | 300 | | |

| | |
|---|---|
| Ground heat pump for heating and cooking | 10,400 |
| Complete electric house heating system | 12,000 |

These figures are from *The Electrical Industry by 1957*, a report prepared by the Market Development Department of the Westinghouse Electric Corporation (1948)

[7] *Economic Almanac, for 1949*, p 271

[8] Bonds in default were compiled by Standard Statistics Company Total securities were based on estimates of Clark, Evans (Editor), *Internal Debts of the United States* (New York The Macmillan Co , 1933), pp 96, 143

were largely electric railways and holding companies The latter would be regarded by some as financial, rather than utility, corporations These earlier years have to be used as a testing period because failures among large corporations were nominal during the decade of the 1940's

**Steam versus hydroelectric companies.** The first classification generally made is according to the method of power generation There are, for instance, hydroelectric, steam generating, and combined hydroelectric and steam generating plants The operating expenses of hydroelectric plants are naturally very much lower than those of steam generating plants For the former the cost of fuel and the attendant labor of handling it are avoided On the other hand, it usually costs from two to four times as much to build a hydroelectric plant as it does to build a steam plant with equal capacity Thus, while the operating expenses of a hydroelectric plant are appreciably lower, investment carrying charges, interest, taxes, the necessary return for stockholders, and sometimes depreciation are decidedly higher

There are other cost factors in hydroelectric generation that must be kept in mind Frequently the source of the water power is far removed from the consuming area, and thus the current must be transmitted over a considerable distance This means a loss in power and an additional investment of funds in transmission lines Furthermore, companies relying on water power usually find that there is a wide difference between the power furnished at different seasons of the year For this reason the hydroelectric plant is frequently supplemented by a steam plant that can carry the load during periods when water power is insufficient Such additional investment, while necessary, is frequently unprofitable because it is used for only a relatively short time during the year The improved efficiency of coal-burning steam-generating plants has made water power uneconomical except where the latter is very favorably located Consumption of coal per kilowatt hour, which originally ran at 12 pounds, had about halved by the beginning of the century, reached four in 1914, and had passed the two-pound figure in the mid-1920's Recent plants requiring less than a pound per kilowatt hour will probably bring the average down to that figure about 1952[9]

The hydroelectric station is often used economically in superpower areas, or by large holding companies, where it is combined with steam stations Under such systems power is normally distributed over wide areas, and the power generated by a hydroelectric unit can be utilized without heavy additional transmission investment by combining it with steam generating plants, which means a pooling of needs for auxiliary steam generation Under such conditions, also, the disadvantages arising from variations in the amount of water power furnished are likewise minimized [10]

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[9] See *National Electric Light Association Proceedings*, 1930, Vol 87, p 1425 Abrams, Ernest R, "New Equipment Shaves Utilities' Fuel Cost," *Barron's*, Nov 21, 1949, p 16

**Classification by market.** Another basis for classifying electric light and power companies is the disposition of product Some plants merely generate power and dispose of it on a wholesale basis to distributing companies Often in financing large generating facilities, especially when the power is to be sold to more than one company, a separate company whose only business is the manufacture of power is organized Such a company does its own independent financing and, when completed, either leases its property to a distributing company or contracts with one or more of the distributing companies to take its entire output [11] On the other hand any company that purchases a major part of its power will have a lower investment and should show a higher plant turnover and a higher operating ratio than the ordinary company The cost of purchased power will appear among operating expenses

The generating company that sells its entire output at wholesale is frequently formed and controlled through stock ownership by the companies that are its customers Typically it represents a large development designed to produce cheap power, taking advantage of the pooled demands of its creators The financial strength of such a company will depend upon its contractual relations, which often bind its customers to purchase a certain amount of power so that, in effect, they are the guarantors of the vendor's fixed charges Since there is no direct contact with the ultimate consumer and consequently no franchise, the legal

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[10] Data for January 1, 1940, place our developed water power at 18 500,000 horsepower There is no figure for potential water power that is exactly comparable with that for developed power, but it is estimated that if the resources of the country were completely developed, the installed capacity would amount to 80,000,000 or more horsepower Federal Power Commission, *Installed Water Power in the United States* (1940)

Most of the undeveloped water power is probably such that it cannot be developed and transmitted to a market without incurring capital costs that would make it more expensive than steam power

[11] Among the more important of such generating companies may be listed

Chicago District Electric Generating Co
Montaup Electric Co
Pennsylvania Water & Power Co
Safe Harbor Water Power Co

position and the vulnerability of the power contracts of such a company should be carefully analyzed The great majority of electric power and light companies, however, both generate and distribute

Utilities might be further classified according to the nature of the territory they serve, the types of customers to which they furnish power, or the nature of their capital structure Such classification will be omitted here and the influence of such differences noted in our later analysis

**Analysis by use of ratios.** The first type of company to be analyzed is the operating company The analysis will be facilitated by the study of certain significant ratios with respect to operations and financial condition and the comparison of such ratios for different companies The problem is not unlike that which existed in connection with certain groups of industrials Operating conditions are sufficiently similar throughout the field to permit the use of common relationships by which the figures of various companies may be compared

**Capitalization and kilowatt capacity** Let us consider first the matter of capitalization and kilowatt capacity The kilowatt capacity of a plant represents the rate at which the plant is capable of generating electric energy Since electric energy is its stock in trade, the maximum of gross revenues it can produce will depend on its possible output The lower the capitalization of a given plant in relation to possible output, the easier it should be to earn a return on that capitalization, other things being equal Until after World War II much of the electric utility plant represented the huge expansion of the 1920's For that period Nash stated that the total cost of urban steam electric power properties, including generation, transmission, and distribution, was likely to range between $250 and $450 per kilowatt of rated generating capacity[12] The lower limit was approached in small cities, where the business was reasonably compact and where no elaborate underground distribution was required In larger communities, where expensive underground transmission and substations was required, the upper limit was reached In other localities requiring an unusually complicated system or in sparsely settled outlying territory, the unit cost might have exceeded the upper limit by a considerable margin.

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[12] Nash, L R, *The Economics of Public Utilities* (New York McGraw-Hill Book Co, 1931), p 343 Houston Lighting and Power Co has been given as an example of a company able to reduce investment in new *generating* capacity below $100 per kilowatt by the use of outdoor construction as compared with $160 per kilowatt, or more, experienced on indoor plants recently constructed in other parts of the country (1948) P P Stathas of Duff and Phelps, Chicago, in an address on "Outlook for the Utility Industry" before the Western Regional Trust Conference of the American Bankers Association, October 15, 1948

Certain figures of the Federal Power Commission permit further study of the combined results of private power plants for the end of 1948.[18] While the composite is an average of construction costs of the past at various price levels, a rough standard of reference is provided. The average investment in steam-generating plant was $103 per kilowatt of capacity, for hydro plants $167, and for internal combustion plants $146. The outlay for transmission systems was $46.60 per kilowatt of generating capacity and for distribution systems $188.75 per customer. These figures would result in an average total cost per kilowatt of capacity ranging from $285 to $349.

Applying these ratios to all private power companies in the country, investment in electric utility facilities at the close of 1948 ran as follows:

| *Type of Property* | *$ Million* | *% Total in Service* |
|---|---|---|
| Generation facilities<br>45,380,885 kw | 5,287 | 37.50 |
| Transmission system | 2,115 | 15.00 |
| Distribution system<br>32,500,000 customers | 6,135 | 43.50 |
| General plant | 528 | 3.75 |
| Intangibles | 35 | 0.25 |
| Total | 14,100 | 100.00 |

These figures do not include construction in progress and other miscellaneous investment found in the balance sheet.

**Station and distribution facilities.** The distinction between investment in station and in distribution facilities is an important one. Although it is true that the service actually sold by electric light and power plants is kilowatt hours produced and delivered, nevertheless it is also true that a company that serves a densely populated area can produce and sell a given amount of current with a lower investment in transmission equipment than can a company that serves a sparsely inhabited area. The *production and delivery cost* is higher in the latter case than in the former. For this reason it is to the advantage of the company to minimize its investment in transmission lines as compared with investment in plant generating capacity. No set rules can be laid down as to the proper proportion of total investment to be allocated to plant and transmission, although it is generally accepted that, in an average case, the plant investment approximately equals distribution investment.

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[18] *Barron's*, May 29, 1950, p. 10.

**Operating ratios.** The significance of operating ratios is much the same here as in the case of industrials, except that this ratio will run much lower than the industrials. There is usually a wide difference between the operating ratios of hydroelectric companies and steam-generating companies. A ratio of from 40 to 60 per cent is probably a normal range for ratios for the former class, although in some cases, especially where the company sells its current largely at wholesale, its operating ratio may be very much under these limits. Steam-generating plants, on the other hand, normally have a somewhat higher ratio, ordinarily ranging from 65 to 75 per cent, although the question whether the company sells its product at wholesale or retail will again affect the ratio. Companies that do largely a wholesale business naturally have the lower ratios. On the other hand a company that purchases much of the power it purchases could show a higher ratio. A similar result may obtain when a company is obliged to generate steam power because its hydro facilities are made idle by drought. This story may be seen in the operating ratios of Southern California Edison.

| | *1945* | *1946* | *1947* | *1948* |
|---|---|---|---|---|
| Operating ratio (%) | 49.9 | 67.4 | 76.6 | 79.3 |
| Kilowatt hours generated (millions) | | | | |
| Steam | 581 | 1,310 | 2,421 | 2,864 |
| Hydro | 5,049 | 4,486 | 4,031 | 3,945 |
| Purchased or exchanged | 85 | 83 | 226 | 436 |
| | 5,714 | 5,879 | 6,678 | 7,245 |

Source: *Moody's Manual of Investments, Public Utilities* 1949.

Fortunately, expanding consumption enabled the company to absorb this burden as well as considerable expense attending a frequency change in the power delivered.

**Depreciation and maintenance.** Among the operating expenses that enter into the computation of the operating ratios, depreciation and maintenance tend to receive special attention. While the real test of their adequacy would lie in an engineering and accounting study of the properties, considerable reliance is placed upon a comparison with average practice. Since the early 1930's, the customary depreciation has increased from as little as one per cent of gross property to around 2½ per cent. In 1940, this expense constituted 10.7 per cent of electric operating revenues. Because it is based upon the fixed original cost of the property, it did not rise proportionately with other expenses and was only 8.6 per cent of revenues in 1948. As new properties at the higher postwar price level are added, depreciation expense might well tend to its former relative position among the expenses.[14]

Maintenance has tended to run around 6 or 7 per cent of revenues. It is quite possible that some lesser items were charged to maintenance as they needed replacement in the earlier days when a lower depreciation rate was common. Probably comparisons of the combined maintenance and depreciation are more reasonable than the single figure for either one.

**Capital structures, earnings, and charges.** A major point of interest in analyzing the investment status of the bonds of a particular company is to compare the interest charges with earnings available for interest payments. Formerly, a utility was expected to show interest charges covered at least two times (after taxes) to merit investment rating. Failure to meet that standard meant a speculative element in the opinion of the market. As interest rates declined from a level near 5 per cent during the 1920's to one around 3 per cent in the 1940's, the coverage figure tended to rise even though the over-all rate of return on total invested capital was declining also. The result has been to look for a minimum coverage of three, in ordinary times, unless special factors can be found to explain the situation. Such a standard should not be employed as a mechanical rating but read in the light of the situation of the particular company in such matters as earnings stability.

To insure conservative financing, a standard that will limit the debt with respect to total investment, as well as debt charges to earnings, is ordinarily invoked. To have investment standing, debt ordinarily should not exceed 60 per cent of the total capital structure. Some regulatory authorities have used their influence to get utilities to seek a maximum standard of 50 per cent. The relative ease in achieving the three times coverage referred to above with current low interest rates may be seen from an example:

|  | *Amount Invested* | *Return* |
|---|---|---|
| Bonds | $ 60 | @ 3% = $1.80 |
| Common stock and surplus | 40 |  |
|  | $100 | @5½% = $5.50 |

If a utility is allowed to earn 5½ per cent on total investment, the resulting $5 50 earnings on each $100 of investment will be more than three times the $1 80 of 3 per cent interest on each $60 of debt

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[14] For further discussion and data, see Federal Power Commission, *Electric Utility Depreciation Practice, 1948*; for earlier material, see Guthmann, Harry G., "Public Utility Depreciation Practice," *Harvard Business Review* (Vol. XX), Winter, 1942, pp. 213–222.

The actual situation for all Class A and Class B private electric utilities (gross revenues in excess of $250,000) can be used to show the actual situation in 1948 [15]

| | *Amount* *($ Million)* | | *Amount* *($ Million)* | *% Relation** |
|---|---|---|---|---|
| Long-term debt | $ 7,719 | Interest | $226 | 3 0% |
| Preferred stock | 2,179 | Preferred dividends | 98 | 4 5 |
| Common stock | 4,226 | Com earnings | 559 | 8 2 |
| Surplus | 1,596 | | | |
| Totals | $15,720 | | $883 | 5 6% |

* Return is calculated on year-end instead of average investment

The coverage of interest charges has shown an upward trend with the continuing decline of rates brought about by refunding The interest coverage (after taxes) for 1948 was 4 2 times, as compared with 3 3 in 1940 and 2 9 in 1938 The combined coverage for interest and preferred dividends reached a figure of 2 7 times in 1948 [16]

Because working capital plays such a secondary part in the investment of most electric utilities, the capital structure will often tend to equal the net plant investment, except for a minority of companies holding investments in the securities of other companies, chiefly associated utilities Thus, the above combined capital structures of $15 7 billion represented a net plant (after depreciation) of $13 9 billion, investments of $1 2 billion, and working capital of $600 million Of the total net utility plant, $12 1 billion, or 88 per cent, was electric and the remainder other types of utility, such as gas or local transportation

The accompanying table of balance sheet relationships provides a background of average character against which the experience of the individual company may be read Such composite figures tend to be dominated by the figures of the large metropolitan companies Nevertheless, it is probably true that much more uniformity is found in the electric utility field than in any other industry group

The capital structure proportions show the common tendency

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[15] Federal Power Commission, *Statistics of Electric Utilities in the U S, 1948,* pp vii, x In addition to the combined figures, the Commission reports data for the individual reporting companies

[16] *Ibid*, p viii

BALANCE SHEET RELATIONSHIPS—ELECTRIC UTILITIES

| | *1948* | *1945* | *1940* | *1938* |
|---|---|---|---|---|
| Capital structure proportions (%'s) | | | | |
| Long term debt | 49.1 | 46.5 | 47.3 | 48.5 |
| Preferred stock | 13.9 | 15.7 | 14.2 | 14.4 |
| Common stock | 28.0 | 30.2 | 30.8 | 30.1 |
| Surplus | 9.0 | 7.6 | 7.7 | 7.0 |
| | 100.0 | 100.0 | 100.0 | 100.0 |
| Current ratio | 1.46 | 1.76 | 1.62 | 1.45 |
| Deprec. reserves to plant (%) | 21.7 | 21.2 | 13.3 | 11.6 |
| Gross Plant per $ of revenues | 3.68 | 3.94 | 5.18 | 5.51 |

Source: Federal Power Commission, *Statistics of Electric Utilities in the United States*, 1948, p. viii.

for debt to shrink in the period 1938–1945 when construction was kept to a minimum. With the end of World War II, expansion was renewed. Easy credit and low yields made bond financing the readiest means of financing. Retained earnings also grew relatively faster than stock issues. The customary low current ratio shows the same easing cash position in the earlier periods with an increased use of spare cash between 1945 and 1948. The same lack of replacements and growth in the earlier periods explain the rising accumulation of depreciation reserves in the earlier periods. The later wave of new additions tended to make gross plant keep pace with, and for many individual companies outrun, the depreciation reserves.

Before the war, the gross plant ran in excess of $5.00 per dollar of operating revenues. Later as inflation pushed up expenses and with them the revenues, the plant largely carried at pre-inflation costs grew smaller relative to revenues.

The same comparison that is made between the net earnings and fixed charges may be made between the earnings available and preferred dividend requirements. Usually preferred stock issues are limited to less than one half of the total stock outstanding. If preferred stock is to achieve investment standing the combined preferred dividends and interest charges should show the earnings coverage standard for similar bonds, and the combined bonds and preferred should not exceed 60 per cent of capital structure. Even where the same statistical standards are met, there is always the fact that they are a subordinate claim to almost invariably present bonds and are a contingent rather than a fixed charge.

**Earnings per share of common stock.** What a company should earn per share upon its common stock would depend ideally upon the amount invested and a rate on that investment commensurate with risk Once actual earnings are known, a reasonable market price is judged by comparison with similar stocks While a number of qualitative factors will produce secondary differences, the chief influences affecting the rate at which earnings are capitalized are likely to be (1) dividend policy, (2) risk as evidenced by coverage of charges and capital structure proportions, and (3) stability of earnings as indicated by the record and the known character of the territory served Because utility stocks are predominantly purchased for considerations of income rather than appreciation, the amount of dividend is a most important market influence

Ordinarily, electric utility common stock sell at prices that range from 12 to 18 times recent per share earnings

Such a ratio depends upon a common belief that future earnings will resemble current earnings closely In a period of exaggerated optimism, constantly increasing earnings will be imagined, and higher multiples applied to earnings in order to arrive at market value In a period of depression, a pessimistic outlook will lead to the belief that losses of business and rate reductions will continue, and consequently lower ratios will be used[17] At any time, differences in the relationship of market price to current earnings may be explainable in terms of differences of outlook for earnings changes among the companies studied

**Other market factors.** While a complete list of factors that may cause the market to capitalize earnings at a high or low rate is impossible, some of the more important items may be given here so that in making his appraisal the investor may weigh their probable importance

1 *Maintenance and depreciation* Some companies are more conservative than others in their maintenance and depreciation policy, therefore their reported earnings for common stock are capitalized at a higher ratio than the similar net income of more niggardly companies

2 *Rates* Regulatory commissions place primary emphasis upon fair return upon the operating investment in setting rates and so the rate of return being earned is watched with that point in mind However, companies whose rates to customers are relatively low or only average are more likely to obtain favorable consideration than those charging high prices for service when the subject of increases is up for consideration The Federal Power Com-

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[17] For example, electric company common stocks could be bought for less than 10 times earnings in 1942 when the war outlook was most gloomy In the spring of 1946, with the burden of war excess profits removed, some best quality stocks sold for over 20 times earnings

mission publishes the rates charged residential customers, these being the object of greatest solicitude by the commission [18] Such figures provide a background for comparisons in different regions and for communities of different size

3 *Growth possibilities* Location in a territory with expansion possibilities is desirable because it offers opportunities for profitable retention of earnings Utilities generally retain less of their earnings than industrials They are more likely to finance through new stock issues The rights to subscribe may be fully as valuable to the stockholder as the accumulation that would result from retained earnings Often the new stock can be paid for with dividends, thereby giving about the same investment results as earnings retention

4 *Type of customer* Where the bulk of the revenues is from industrial consumers whose business fluctuates greatly from year to year, investment risk is increased A high proportion of domestic revenues is usually favorable to stability

5 *Nonelectric utility services* A considerable number of electric companies perform other forms of utility service, such as gas, transit, and, less frequently, steam and water service Such other lines have usually shown less stable net income and sometimes, as in the case of transit operations, have been definitely unprofitable [19] Special study is desirable where such lines contribute more than a nominal amount to gross revenues

6 *Territory* The economic diversification and stability of the territory served are also factors in appraising the earnings outlook of a utility Heavy reliance of a region upon the production of durable goods, as in the case of the iron and steel industry, means less stability, especially if a large part of the revenues are derived from industrial rather than residential customers

7 *Threat of municipal competition* In connection with the development of its water power projects in various parts of the country, notably in the region of the Tennessee Valley Authority, the Federal Government has encouraged municipalities to go into the power business by offering loans for either the purchase of existing plants or the construction of facilities Federal loans at a low rate of interest have been made available with a substantial por-

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[18] See Federal Power Commissions, *National Electric Rate Book* This material can be found in convenient form of Typical Net Electric Bills for residential services in cities of 50,000 population and more in *Moody's Manual of Investments, Public Utilities, 1949*, page a10

[19] Abrams, Ernest R, "Sideline Services Cut Electric Utilities' Net," *Barron's*, December 6, 1948, p 31 For primary data, see Federal Power Commission, *Statistics of Electric Utilities in the United States, 1948*, p x

tion of the total cost an outright gift by the Public Works Administration Where faced with such a possibility, the private power company may be forced to sell for less than the fair book value of its plant In general, this threat is most serious for companies operating in the vicinity of Federal hydroelectric developments but is possible in other communities [20]

To the extent that such investment duplicates private investment, it tends to destroy the value of the existing private facilities The electric industry is a growing one, however, and much of the additional capacity can be absorbed without such losses to investors if the Government decides to minimize destructive competition

A partial idea of the magnitude of the current advantage enjoyed by a publicly owned over a privately owned electric company may be had by a comparison of industry figures Federal income taxes amounted to 7 3 per cent and other taxes to 9 6 per cent or a total of 16 9 per cent of gross revenues received from electric utility operations of private (Class A and B) companies in 1948 [21] Similar publicly owned electric utilities, excluding federal projects, showed total taxes equal to 2 0 per cent of gross revenues [22] The capital cost (interest plus net income for stockholders) for the private companies amounted to 18 4 per cent of gross revenues Had they been able to raise all their funds by the sale of tax exempt bonds and cut their capital cost by one half, they could have reduced their rates by 9 2 per cent without any changes in operating efficiency

But these figures tell only a part of the story Federal power projects represent about half of the publicly owned electric capacity and produce a substantially higher fraction of the public power The four hydro giants—the Tennessee Valley Authority, Grand Coulee, Boulder Dam, and Bonneville—represent almost a billion-dollar investment in electric plant They pay no federal income taxes and make only a small contribution, if any, to local taxes As for capital return, they are under no obligation to earn any return upon the capital that is wholly supplied by the Federal Treasury If such a federal property covers its operating expenses, which are extremely small for a hydro generating plant, it is able to appear to break even It shows no capital cost in its income statement Consequently it can sell power at extremely low rates Even when such a property does reach the point where it returns to the Treasury an amount sufficient to equal what the Federal Government pays for its borrowed funds, currently under 2½ per cent, it has the same advantages over the private utility previously mentioned on taxes and capital costs

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[20] Electric plant capacity by class of ownership, public or private, is given in *Moody's Manual of Investments, Public Utilities* Detailed financial information on public properties is reported in Federal Power Commission, *Statistics of Publicly Owned Electric Utilities*, 1948

[21] Federal Power Commission, *Statistics of Electric Utilities in the United States*, 1948, page x

[22] Federal Power Commission, *Statistics of Publicly Owned Electric Utilities*, 1948, page viii Because not all the advantages of the publicly owned company are passed along to the consumer, a substantial equity investment has been built up upon which no return is required

If the "economy" of power purchases by the municipal system from Federal power plants is ignored, we still come back to the percentage differences previously mentioned If a private utility could reduce its tax costs from 16 9 to 2 0 per cent and cut capital costs one half from the existing 18 4 per cent, the result would be a reduction of 24 percentage points. It could in other words cut rates by one fourth This figure gives one some idea of the differentials involved that are unrelated to operating efficiency Actually, publicly owned systems do not attempt to pass all "savings" along to consumers "Profits" are retained to eliminate debt and to contribute to municipal revenues Sometimes the city collects a hidden dividend in the form of "free" municipal power

Any utility, public or private, that can offer lower rates can build larger power sales When the customer buys more kilowatt hours he reaches into the lower rate brackets and his average cost per kilowatt hour will decline Because comparisons between public and private utilities are sometimes made on a per-kilowatt-hour cost, the point should be noticed A utility that sells more power per customer would show a lower per-kilowatt-hour cost even though it charged the same rates as another When, as a result of a favored position, the publicly owned company is able to reduce rates somewhat, its apparent advantage is compounded when put on this popular statistical basis

8 *Merger possibilities* A stock might enjoy a favorable price because of a prospective offer of more than the normal market value The higher value of the securities offered by the purchasing corporation might be due to superior marketability or greater prestige than that enjoyed by the vendor corporation rather than to greater earning power However, the purchaser might offer a favorable price because he saw an opportunity of developing increased earnings by more efficient operation This situation would be most likely to exist where the company was earning less than a fair return on its operating investment

**Analysis of holding companies more complex.**[23] Analysis of individual operating companies is simpler by far than analysis of the holding company that has a complex capital structure and consists of a group of more or less heterogeneous operating companies—some steam generating, some hydroelectric, others engaged in the manufacture of gas, and still others, in furnishing electric transportation. The fact that holding companies may be composed of operating companies of a diverse character may make it difficult to go beyond a financial analysis. At least the average investor, who does not have at his disposal all the data regarding the individual companies, must content himself with an analysis based largely upon the consolidated accounts of the holding company.

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[23] Holding companies are also discussed on pp 303 to 305

**Analysis of holding company investments.** The importance of consolidated accounts in an analysis of holding company investments leads first to a brief discussion of consolidated statements and their significance to the investor. The purpose of the consolidated statement is to show the combined assets and liabilities and the operating results of a group of companies. The process of account consolidation consists of combining the asset and the liability accounts of all the companies of the group into one balance sheet, and of repeating the procedure with the income accounts, eliminating in both cases all intercompany items. The consolidated assets include the property of all the companies, exclusive of intercompany claims, and the liabilities include only debts and securities held by outsiders.

Suppose, for example, that we have two companies, *A* and *B*, and that 90 per cent of each company's common stock is owned by holding company *H*. The independent statements of all three companies, we shall assume, are as illustrated in the following tables.

BALANCE SHEET—COMPANY *A*

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Plant and Equipment | $ 500,000 | Capital Stock | $ 500,000 |
| Inventories | 200,000 | Accounts Payable | 250,000† |
| Accounts Receivable | 250,000* | Surplus | 250,000 |
| Cash | 50,000 | | |
| | $1,000,000 | | $1,000,000 |

BALANCE SHEET—COMPANY *B*

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Plant and Equipment | $ 700,000 | Common Stock | $ 300,000 |
| Inventories | 200,000 | Preferred Stock, 7% | 300,000 |
| Accounts Receivable | 100,000 | Bonds, 6% | 300,000 |
| Cash | 200,000 | Accounts Payable | 150,000* |
| | | Surplus | 150,000 |
| | $1,200,000 | | $1,200,000 |

BALANCE SHEET—COMPANY *H*

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Investments | $ 720,000§ | Common Stock | $ 400,000 |
| Accounts Receivable | 180,000† | Preferred Stock, 6% | 300,000 |
| Cash | 250,000 | Bonds, 6% | 300,000 |
| | | Accounts Payable | 100,000 |
| | | Surplus | 50,000 |
| | $1,150,000 | | $1,150,000 |

* Includes $50,000 owed to *A* by *B*
† Includes $50,000 owed to *H* by *A*
§ Includes $450,000 of common stock of *A* and $270,000 of common stock of *B*, both carried at par The balance of this stock is owned by the public

It is now desired to consolidate these statements and to eliminate all intercompany items [24] We shall start first with the capital struc-

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[24] The mechanics of this operation may be illustrated by telescoping the three statements and eliminating intercompany items in the following manner

| *Assets* | | *Eliminate Inter-company Items* | *Amount at Which Carried in Consolidated B S* |
|---|---|---|---|
| Plant and Equipment | | | |
| *A* | $500,000 | | |
| *B* | 700,000 | | $1,200,000 |
| Inventories | | | |
| *A* | 200,000 | | |
| *B* | 200,000 | | 400,000 |
| Receivables | | | |
| *A* | 250,000 | $ 50,000 | |
| *B* | 100,000 | | |
| *H* | 180,000 | 50,000 | 430,000 |
| Cash | | | |
| *A* | 50,000 | | |
| *B* | 200,000 | | |
| *H* | 250,000 | | 500,000 |
| Investments | | | |
| *H* | 720,000 | 720,000 | |
| | | | $2,530,000 |
| *Liabilities* | | | |
| Capital Stock | | | |
| *A* | $500,000 | $450,000 | |
| *B* | 300,000 | 270,000 | $ 80,000 |
| *H* | 400,000 | | 400,000 |
| Surplus | | | |
| *A* | 250,000 | | |
| *B* | 150,000 | | |
| *H* | 50,000 | | 450,000 |
| Preferred Stock | | | |
| *B* | 300,000 | | 300,000 |
| *H* | 300,000 | | 300,000 |
| Bonds | | | |
| *B* | 300,000 | | 300,000 |
| *H* | 300,000 | | 300,000 |
| Accounts Payable | | | |
| *A* | 250,000 | 50,000 | |
| *B* | 150,000 | 50,000 | |
| *H* | 100,000 | | 400,000 |
| | | | $2,530,000 |

ture of the holding company as shown by the combined statement Our first step is to state what stocks and bonds are owned by the public These amounts we find to be as follows

| | |
|---|---|
| Common Stock of *H* | $400,000 |
| Preferred Stock of *H* | 300,000 |
| Bonds of *H* | 300,000 |
| Bonds of *B* | 300,000 |
| Preferred Stock of *B* | 300,000 |
| Common Stock of *A* and *B* Held by Public | 80,000 |

We may proceed by combining the asset accounts and liabilities of the consolidated group, and by restating its capital structure in the customary form, as follows

COMBINED OR CONSOLIDATED BALANCE SHEET—COMPANY *H*

| | | | |
|---|---|---|---|
| Plant and Equipment | $1,200,000 | Preferred Stock 6% | $ 300,000 |
| Inventories | 400,000 | Common Stock | 400,000 |
| Accounts Receivable | 430,000* | Bonds | 300,000 |
| Cash | 500,000 | Bonds of Subsidiaries | 300,000 |
| | | Subsidiary Preferred Stocks | 300,000 |
| | | Minority Interest | 120,000† |
| | | Accounts Payable | 400,000* |
| | | Surplus | 410,000 |
| | $2,530,000 | | $2,530,000 |

* Excludes $50,000 owed *A* by *B* and $50,000 owed *H* by *A* As a result of this process, we are able to show the composite situation as it affects an outside investor We have shown only the actual assets of the group of companies and the manner in which participation therein is accorded This has been done by the complete elimination of all intercompany items, such as debts owed entirely within the group, or capital stock of the subsidiaries owned by *H*

† Minority interest is the term applied to the common stock of subsidiaries outstanding in the hands of the public It includes the par or stated value of such stock plus its proportionate share of the surplus The total is arrived at as follows

| | *Stock* | *Surplus* | *Total* |
|---|---|---|---|
| Minority Stock of *A* | $50,000 | $25,000 | $75,000 |
| Minority Stock of *B* | 30,000 | 15,000 | 45,000 |
| Total | $80,000 | $40,000 | $120,000 |

**Consolidation of income accounts.** The process of consolidating the income accounts of these concerns is effected in much the same way Let us proceed on the assumption that the independent income accounts of the three companies for the year ended December 31, 1950, were as follows

COMPANY *A*

| | |
|---|---|
| Gross Revenues | $150,000 |
| Operating Expenses | 100,000 |
| Net Earnings | $ 50,000 |
| 5% Dividends on Stock | 25,000 |
| Surplus for Year . . . | $ 25,000 |

COMPANY *B*

| | |
|---|---|
| Gross Revenues | $180,000 |
| Operating Expenses | 110,000 |
| Available for Charges | $ 70,000 |
| Interest on Bonds | 18,000 |
| Net Earnings | $ 52,000 |
| Dividends on Preferred | 21,000 |
| 6 2/3% Dividends on Common | 20,000 |
| Surplus for Year | $ 11,000 |

INCOME ACCOUNT FOR *H*

| | |
|---|---|
| Dividends Received | $40,500* |
| Miscellaneous Expenses | 2,000 |
| Available for Interest and Dividends | 38,500 |
| 6% on Bonds | 18,000 |
| | $20,500 |
| 6% Dividends on Preferred | $18,000 |
| Balance for Common and Surplus | $ 2,500 |
| Earned per Share Common | $ 62½ |

* Including $22,500 from *A* and $18,000 from *B*, these amounts constituting 90 per cent of the dividends of these companies.

Before an attempt is made to consolidate the earnings of these companies, several points should be clearly understood. In the first place, it should be borne in mind that Company *H*, which owns 90 per cent of the stock of *A* and *B*, really has an equity in the surplus earnings of these companies, to the extent of 90 per cent of $25,000 and $11,000 respectively, in addition to the 5 per cent dividend received on its stockholdings. In other words, the true earnings of *H*, based on its proportionate share of the surplus of *A* and *B*, would be determined as follows:

| | |
|---|---|
| Dividends Received | $40,500 |
| Plus 90% Undistributed Earnings of *A* and *B* | 32,400 |
| Real Earnings of *H* | $72,900 |
| Less Miscellaneous Expenses | 2,000 |
| Available for Bond Interest | $70,900 |
| Less Bond Interest | 18,000 |
| | $52,900 |
| Less Preferred Stock Dividends | 18,000 |
| Net Earned for Common | $34,900 |
| Net per Share | $ 8.73 |

Thus we find that net per share of common really amounts to $8.73 instead of 62½ cents.

The second point of interest is that the bonds and preferred stocks of the holding company have a claim on operating earnings that is preceded by the claims of the bonds and the preferred stocks of the operating companies, and so are only on a parity with their common stocks. This subordinate position is caused by the fact that the principal source of income of the holding company is the dividends received from its stockholdings in the subsidiary companies. Accordingly, there are no earnings for its bonds until obligations of the underlying companies prior to their common stocks have been met and dividends have been declared on such stocks This situation will appear in the consolidated statement of earnings that we shall now present

CONSOLIDATED INCOME ACCOUNT–COMPANY *H*
AND SUBSIDIARIES

Year Ended December 31, 1950

| | |
|---|---|
| Gross Revenues | $330,000 |
| Operating Expenses | 210,000 |
| Net Available for Interest | $120,000 |
| Interest on Subsidiary Bonds | 18,000 |
| | $102,000 |
| Dividends on Subsidiary Preferred Stocks | 21,000 |
| Net from Subsidiary Operations | $ 81,000 |
| Proportion of Net Belonging to Subsidiary Common Stocks Held by Public | 8,100 |
| Balance Available for *H* | $ 72,900 |
| Less Expenses | 2,000 |
| | $ 70,900 |
| Interest on *H*'s Bonds | 18,000 |
| | $ 52,900 |
| Dividends on *H*'s Preferred Stock | 18,000 |
| Available for *H*'s Common Dividends and Surplus | $ 34,900 |

The form used above is substantially that customarily used It shows the proper order in which each charge should be arranged and enables the student to grasp more clearly the results of holding company accounts The consolidated income account (page 332) of the American Water Works, Inc, for the years 1947 and 1948, and the consolidated balance sheet for the end of 1948, serve to show the form in which the investor may reasonably expect to find income account data shown on a consolidated basis [25]

A consolidated balance sheet, condensed somewhat from the original, is also shown so that the reader may compare the significant relations between the two statements that have been discussed Explanatory footnotes have been omitted here, although they are frequently valuable to an understanding and interpretation of the figures For example, a note concerning the property account states that in a study of twelve subsidiaries with property accounts of $64,352,183 there were found adjustments (an excess of book value over original cost) amounting to $7,920,074, of which $5,491,149 was eliminated in the consolidated balance sheet and a partial reserve for amortization of the remainder set up, a second group with properties of $38,446,545 are still in the process of study, and a third group with properties of $79,941,636 are not subject to original cost requirements The president's report also indicates that some properties are in the process of sale to municipalities

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[25] Taken from Annual Report of company for 1948 So many electric holding companies are still subject to continuing disintegration that this water system, a descendant of a former mixed electric and water system, seemed of greater interest The case also presents combined balance sheet and income account data which the reader may contrast with electric company data already given earlier in this chapter It will also serve in connection with the discussion of the water utility business in the next chapter

**Financial analysis of holding companies.** So far as the operations of the holding company system are concerned, the financial and other ratios as well as general background factors are studied along the lines suggested for an operating company The relation of operating expenses to revenues, of revenues to property investment, of earnings to total investment, of depreciation and maintenance to property and revenues, the character of management, the territory, and the kind of utility service rendered are all familiar points of analysis by now The special problem for a holding company lies in the study of the consolidated earnings in relation to the more complex arrangement of stocks and bonds and the system capital structure

A statement of the capital structure with its per cent proportions taken from the consolidated balance sheet reads

| *(Thousands of Dollars)* | *Amount* | *Per Cent* |
|---|---|---|
| Subsidiary bonds | $100,055 | 63 |
| Subsidiary preferred stocks | 22,317 | 14 |
| Minority interest | 228 | — |
| Holding company bonds | 15,000 | 9 |
| Holding company preferred | none | — |
| Common stock | 13,522 | 8 |
| Surplus | 8,859 | 6 |
| Total | $159,981 | 100 |

Unlike the average electric company figures previously studied, this water system has operating-company (subsidiary) bonds in excess of the suggested maximum of 60 per cent and the sum of subsidiary bonds and preferred total 77 per cent This heavy use of senior securities depends for its safety upon the stable demand in the water utility field as discussed in the next chapter The com-

### AMERICAN WATER WORKS COMPANY, INC AND SUBSIDIARIES

Consolidated Balance Sheet—December 31, 1948

*Assets*

| | | | |
|---|---|---|---|
| Property, Plant and Equipment, Including Intangibles | | $177,249,215 | |
| Less—Excess of adjusted book equity at acquisition over cost of investments in subsidiaries | | 1,992,542 | $175,256,673 |
| Cash Deposited With Trustees (for property additions) | | | 2,117,000 |
| Miscellaneous Investments | | | 10,952 |
| Current and Working Assets | | | |
| Cash in banks and on hand | | $ 7,909,701 | |
| Special deposits | | 1,730,024 | |
| Customers accounts receivable | $2,996,420 | | |
| Miscellaneous accounts receivable | 131,401 | | |
| | $3,127,821 | | |
| Less—Reserves for doubtful accounts | 105,226 | 3,022,595 | |
| Materials and supplies, including construction materials, at average cost or less | | 2,413,388 | |
| Prepaid insurance, taxes, etc | | 106,729 | |
| Total current and working assets | | | 15,182,437 |
| Deferred Charges | | | |
| Unamortized debt discount, call premium, and expense | | $ 1,936,540 | |
| Unamortized commission and expense on preferred stocks | | 231,285 | |
| Other | | 302,566 | 2,470,391 |
| | | | $195,037,453 |

mon stock of these subsidiary operating companies is almost wholly owned by the holding company and so does not show in this consolidated structure save for the fraction of one per cent, held by others, that is listed as Minority Interest. Although listed ahead of the holding company issues, this interest, owning a few of the same shares held by the holding company, actually shares on an equal basis in property and earnings with the latter.

The order of arrangement does reflect the junior position of the holding company bonds to those of the subsidiaries. When combined with the prior issues, the bonds bring the total of bonds and preferred to a total of 86 per cent of capital structure with a protecting common stock equity of but 14 per cent. Such bonds depend upon the stability of the dividends that the common stocks of the subsidiaries pay to the holding company. The point is emphasized in this case by the pledge of these stocks as collateral security. The diversification of the common stocks held plus

### AMERICAN WATER WORKS COMPANY, INC AND SUBSIDIARIES

Consolidated Balance Sheet—December 31, 1948

*Liabilities*

| | | |
|---|---|---|
| Capital Stock and Surplus | | |
| Common stock of American Water Works Company, Inc —$5 par value per share | $ 13,522,360 | |
| Paid-in surplus | 7,282,222 | |
| Earned surplus | 1,576,346 | $ 22,380,928 |
| Minority Interests | | 227,955 |
| Preferred Stocks of Subsidiaries | | 22,291,900 |
| Premium on preferred stocks | | 25,192 |
| Long-Term Debt | | |
| American Water Works Company, Inc —3% Collateral Trust Bonds due September 1, 1957 | $ 15,000,000 | |
| Subsidiaries | 96,216,000 | 111,216,000 |
| Short term Notes of Subsidiaries Payable to Banks (incurred for construction—to be repaid by issuance of securities of subsidiaries) | | 3,839,000 |
| Total capitalization | | $159,980,975 |
| Current and Accrued Liabilities (exclusive of notes shown above) | | 7,092,790 |
| Customers' Advances for Construction | | 2,613,984 |
| Deferred Credits | | 853,417 |
| Reserves | | |
| Depreciation and retirements | $ 22,571,752 | |
| Utility plant acquisition adjustments | 321,836 | 22,893,588 |
| Contributions in Aid of Construction | | 1,602,699 |
| | | $195,037,453 |

the margin of value over the amount of the debt make such bonds somewhat superior in investment quality to the stocks that serve as their basic security Nevertheless, the tendency since the 1930's has been to reduce or eliminate such holding company debt except where the operating companies use less than the usual proportion of prior claims Then the holding company debt, in effect, becomes an equivalent of so much operating company debt but convenient for system financing, as in the case of the American Telephone and Telegraph Company Under such a philosophy, the sum of the holding company debt and preferred stock when combined with prior claims will be kept within limits ordinarily set for operating company financing

In calculating the coverage of the holding company charges, they are customarily treated like junior claims, that is, they are

## AMERICAN WATER WORKS COMPANY, INC AND SUBSIDIARIES

Statement of Consolidated Income

(For the Years Ended December 31, 1948 and 1947)

| | *1948* | *1947* |
|---|---|---|
| Income of Subsidiary Companies | | |
| Operating revenues | $24,552,814 | $23,193,214 |
| Operating expenses and taxes | | |
| Operation | $ 9 078,967 | $ 8,183,699 |
| Maintenance | 1,605,368 | 1,390,449 |
| Provision for depreciation and retirements | 1,390,951 | 1,304,412 |
| Amortization of utility plant acquisition adjustments | 107 289 | 107 169 |
| Federal income taxes | 1,216,797 | 1,583,033 |
| Charges eqivalent to reduction in Federal income taxes resulting from refinancing of bonds | 110,920 | — |
| Other taxes | 3,155,900 | 2,911,769 |
| Total | $16,666,192 | $15,480,531 |
| Gross income | $ 7,886,622 | $ 7,712,683 |
| Income deductions (exclusive of interest and preferred dividends to parent company) | | |
| Interest | $ 3,518,997 | $ 3,370,014 |
| Amortization of debt discount, premium (net) and expense | 218,774 | 239,175 |
| Interest charged to construction (credit) | (82,034) | (54,434) |
| Preferred dividends | 1,210,466 | 1,170,586 |
| Minority interests | 6,847 | 8,378 |
| Miscellaneous | 55,760 | 43,317 |
| Total | $ 4,928,810 | $ 4,777,036 |
| Combined net income applicable to the Company's investments in subsidiaries | $ 2,957,812 | $ 2,935,647 |
| Income From Subsidiary Sold in 1948 | | |
| Profit on sale of investment less Federal income taxes of $141,000 thereon | $ 272,962 | $ — |
| Net income of subsidiary to date of sale | 72,932 | 91,187 |
| Total | $ 345,894 | $ 91,187 |
| | $ 3,303,706 | $ 3,026,834 |
| Expenses, Taxes and Interest of American Water Works Company, Inc | | |
| General and administrative expenses | $ 380,652 | $ 200,000 |
| Federal income taxes | 70,240 | 87,000 |
| Other taxes | 12,035 | 10,000 |
| Interest on Collateral Trust Bonds | 450,000 | 450,000 |
| Amortization of debt expense | 3,500 | 3,500 |
| Total | $ 916,427 | $ 750,500 |
| Consolidated net income | $ 2,387,279 | $ 2,276,334 |

AMERICAN WATER WORKS COMPANY, INC AND SUBSIDIARIES
Statement of Consolidated Income
(For the Years Ended December 31, 1948 and 1947)
*(Continued)*

Earned Surplus Account

| | | |
|---|---|---|
| Add | Surplus of January 1, 1948 | 799,229 |
| | Miscellaneous net income | 26,494 |
| | | $ 3,213,002 |
| Deduct | Dividend on A W W Co common stock | 1,622,683 |
| | Amortization of preferred stock expenses | 13,973 |
| Balance, December 31, 1948 | | $ 1,576,346 |

added to the sum of the prior subsidiary operating company charges and the total divided into the system earnings, which latter would eliminate the minority interest share and subtract holding company as well as operating company expenses This calculation gives a coverage figure of 1 43 times earned for the American Water Works bonds if the nonrecurring profit on the sale of an investment is included as earnings Better practice would be to eliminate such unusual items, which would result in an overall "times earned" figure of 1 38

Three factors should be kept in mind in the interpretation of this relatively low ratio (1) The water industry was troubled much more than the electric industry in 1948 by the rising costs of an inflationary period The possibility of compensatory rate adjustments would need to be weighed (2) The water industry has enjoyed an ability to trade on relatively thin equity because of the stable demand for water In view of the past SEC tendency to eliminate holding company debt, or treat it as a temporary measure (save where it is a substitute for so much operating debt as suggested above), it would not be surprising to see these holding company bonds gradually retired (3) Finally, the bondholder looks at the specific stocks that serve as collateral security as well as the over-all measures, and he may decide that the long-run dividends and values have been sufficient to indicate ability to care for debt In this particular case, the company is in the course of negotiating the sale of some properties to municipalities The presence of debt would make it easier and cheaper to contract the holding company capital structure than if the latter were wholly composed of stocks

An analogous situation to this latter condition has occurred in the disintegration of some of the electric holding companies under the Holding Company Act of 1935 In some, short-term debt was deliberately employed where a near term sale of properties was contemplated The wholesale dissolution of these formerly important holding companies has made it undesirable to describe these giants that dominated the electric utility field In a few years those that remain will bear no resemblance to the pyramided empires of the 1920's but will represent single interconnected regional systems, which for some reason it is inconvenient to merge into a single corporation For such, an understanding of the analysis of the holding company's consolidated statements will continue to be useful even though their capital structures will tend to approach the simplicity and conservatism of the individual operating company

Where the process of disintegration is still in process, a somewhat different analytical approach than that outlined is necessary Current earning power will be less significant, especially for the holding company common stock, than the values that will be received in the course of liquidation The analyst is under the necessity of estimating how much of the investments will be absorbed in satisfying the senior obligations of the holding company and what will remain for the common stock Since it is typically necessary to dispose of relatively high-yielding common stocks to pay off the lower-yielding bonds and preferred of the holding company, the result is to leave a remainder of stocks with less earning power than that shown in the consolidated income account for the holding company common stock However, the delays in the enforcement of the 1935 act permitted the retention of earnings and the building of values such that some holding company stocks that originally appeared to have no or very little value were able to participate in the final dissolution A rise in market values during the period of negotiation and dissolution also offered possible gains to the more weakly situated holding company security holders

**Federal regulation** The Public Utility Act of 1935 was designed to give the Securities and Exchange Commission the power to regulate electric and gas utility holding companies The Federal Power Act (1935) and the Natural Gas Act (1938) gave the Federal Power Commission control over the interstate electric power and gas businesses The so-called "death-sentence" provision (Section 11) of the first act requires the elimination of holding companies beyond the second degree, that is, three "layers" of companies may be permitted (1) operating companies controlled by (2) intermediate holding companies, the latter controlled in turn by (3) a top holding company Even holding companies of the second degree will continue only at the sufferance of the commission and will each be limited to an integrated utility system that is not too large to impair local management, efficient service, and effective regulation (A holding company is defined as one with 10 per cent of the voting control)

Those holding company systems that are wholly intrastate in character are unaffected by this legislation A system whose properties and operations lie outside the United States, like American and Foreign Power Company, can also claim exemption Holding companies that survive are brought under the regulatory power of the Securities and Exchange Commission, much as operating companies have been under state commission control in the past Accounts and reports, the acquisition and sale of assets, financing, and intercompany relations are regulated by the commission Services rendered by holding companies to subsidiaries are to be on a cost basis and without profit Such regulation can be seen to be of financial importance since it will include (1) passing upon charges made by the holding company to the operating company, including the rate of interest on loans, (2) restricting dividends of operating companies to holding companies, and (3) refusing to approve even operating company financing unless stock equities are deemed adequate in relation to proposed debt and unless depreciation allowances are sufficient

Actual operations involving the transmission and sale of electricity over state boundaries are brought under the control of the Federal Power Commission Its powers are much like those of state commissions and involve regulation of rates and power to compel the interconnection and coordination of electric facilities and to ban "write-ups" in asset accounts In collaboration with the state commissions, acting through their National Association of Railroad and Utility Commissioners, it prescribed a uniform system of accounts for electric utilities under its jurisdiction effective January 1, 1937 Such uniform accounts are especially serviceable for investment study They provide for the statement of plant at original cost The Commission has lent its support to the prudent-investment rate base[26] Depreciation rates have also been regulated and vigorous action has been taken in the matter of wholesale rates for interstate power which it found excessive or discriminatory Collaboration with the state commissions has been close

**Summary** The chief points of investment interest outlined in this chapter have proved to be the study of earnings, the coverage of charges, and the form of the capital structure as in the preceding discussion of industrial securities But the greater stability of electric utility earnings permit a much larger use of debt and preferred stock with reasonable safety Other significant and characteristic differences were seen Because of the lower capital turnover, the earnings return to the investors in the enterprise is a much larger per cent of the customers' dollar The correspondingly lower operating ratio is presumably a contributory factor to the comparatively stable net income even though the primary factor is the nature of the business itself and its monopoly character The federal income tax, which is based on that part of the capital return belonging to the stockholders, is also larger relative to the sales dollar than for industrials Since it follows interest charges, it constitutes a part of the safety cushion protecting the bondholders Since it fluctuates with income, it is less dangerous to the stockholder than the fixed expenses, such as property taxes and depreciation The same low capital turnover factor explains why a 2½ per cent rate of depreciation on gross property may run as high as 8 to 10 per cent of the revenue dollar

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[26] Barnes, Irston B, *The Economics of Public Utility Regulation* (New York F S Crofts & Co, 1942), p 776

This subject of the economics of the industry should help the reader to better appreciate the brief discussion of the public versus private ownership debate, where capital return and taxes play such an important part

Particular attention should also go to the "other factors" studied by the investor (pages 320–323), which are of major concern to those anxious to understand the factors behind the financial statements The holding company must also be understood by the competent analyst in this field, even though its importance and complex forms are steadily diminishing as the result of the dissolution program of the Securities and Exchange Commission under the 1935 act The pervasive influence of both federal and state regulation are special factors that require major consideration in the field of utility investment

# 12

# Investment Analysis of Special Classes of Utilities (Concluded)

## The Gas Industry

**Historical development** Next to the service of water supply, the service of gas supply is the oldest of the public utilities here under consideration The manufacture of gas for purposes of illumination dates from the latter part of the eighteenth century, when experimentation was carried on simultaneously in England and France Apparently this was only laboratory experimentation until 1805, or thereabouts, at which time, there is reason to believe, gas was used for lighting in Manchester, England

The first recorded experimentation in the United States was in 1806 in Newport, Rhode Island, when coal gas was manufactured for private use on the premises of Daniel Melville The first crude processes were improved from time to time, and in 1813 Melville secured a patent and introduced gas for illumination in a cotton mill in Watertown, Massachusetts

The prospects for commercial development of gas manufacture led to decided improvements in technological processes, and the first gas company, the London and Westminster Gas Light and Coke Co , was chartered in London in 1812[1] The first gas company in the United States, the Gas Light Company of Baltimore, was chartered in 1816 and was authorized to "manufacture, procure or collect 'gas or inflammable air,' and to preserve, use, and distribute it as a means of giving light or any other useful purpose, or for lighting the streets and public places and houses and other buildings "[2]

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[1] See Ginsberg, I , "The Story of Gas," *American Gas Journal,* Oct 11, 1924, p 928

[2] Wilcox, Delos F , *Municipal Franchises* (New York Engineering News Book Dept , 1910), Vol 1, p 623

The Boston Gas Light Company was organized in 1822 and was soon followed by the organization of companies in New York City in 1823, in Brooklyn and Bristol, R I, in 1825, in New Orleans in 1835,[3] in Pittsburgh and Philadelphia in 1836, in Louisville in 1838, in Cincinnati in 1841, and in Albany in 1845[4]

These early companies gradually overcame a variety of obstacles Large capital investments were required for the construction of the manufacturing plants and the distribution systems Early opposition, because of fear that the manufacture and use of gas endangered the public safety, soon gave way to sympathetic support of the projects Notwithstanding the relatively high cost of gas for illumination, the industry continued to develop In 1849 thirty establishments were engaged in the manufacture of illuminating gas for sale, with a capital investment approximating $7 million, producing a commodity approximating $2 million in value, with an employed personnel of approximately 900 persons, earning in excess of $390,000 In 1869 the industry had grown to include 390 establishments, employing a capital investment of $72 million, manufacturing a product valued in excess of $32 million, and employing a personnel of approximately 8,700 persons, earning $6 5 million[5] Although today these figures appear to be small, they represent a rapid rate of growth

**Competition with oil and electricity** Until 1870 gas for illumination competed with candles and whale oil only, and its superiority was unquestioned The introduction of kerosene oil, however, offered more serious competition It possessed higher illuminating value than either of its forerunners, and it could be utilized with considerably more economy than gas Doubtless this retarded somewhat the development of the gas industry, but the situation was changed very soon by the results of certain experimentations in production processes Until this time only coal gas had been produced, but the investigations of Du Motay and Lowe[6] led to the introduction of so-called water gas The manufacture of water gas at lower production costs had hardly overcome the opposition of coal-gas producers, however, when the appearance of electricity as an illuminant brought the first important challenge to gas

The perfection of the electric arc in 1878 was followed in 1881 by the appearance of the incandescent electric lamp The economical use of gas for heating purposes had not as yet been demonstrated, but the superiority of the electric lamp from the standpoint of safety and illuminating value soon encouraged the search for new uses The cost of gas was gradually reduced, and its use was extended to domestic and industrial heating Notwithstanding the growth and development of central station electric lighting, the gas industry continued to expand More and larger uses for gas were found The appearance of electricity served not so much to retard its development as to force it into a new field of public service, where its natural superiority was to be demonstrated In 1889, 714 of the then 1,244 cities in the United States, each with a population in excess of 2,500, were supplied with gas

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[3] "Manufactures," *Twelfth Census of the United States,* Part IV, Vol X, p 713

[4] Barker, Harry, *Public Utility Rates* (New York McGraw Hill Book Co, 1917), p 278

[5] "Manufactures," *Eleventh Census of the United States,* Part III, p 699

[6] "Manufactures," *Twelfth Census of the United States,* Part IV, Vol X, p 714

In 1899 the gas industry had grown to include 877 establishments with a capital investment of $567 million, a product valued at $76 million, and an employed personnel of 28,000 persons, earning approximately $18 million[7] Of the 1,653 cities in the United States, each with a population in excess of 2,500, 827 were supplied with gas Of these cities, 798 were served by one plant each, 22 cities by 2 plants each, 4 cities by 3 plants each, and Chicago claimed 4, Boston 6, and New York 13

Something of the size of the gas industry may be gained from the following figures on the number of customers, volume of gas sold, and revenues from sales for 1948[8]

| | *Total* | *Natural* | *Manufactured* | *Other* |
|---|---|---|---|---|
| Number of customers (thous ) | 22,248 | 11,466 | 8,502 | 2,280 |
| Sales—(billions of cu ft ) | (a) | 442 | 2,895 | 158 |
| Revenues—($ million) | 1,580 | 463 | 995 | 122 |

(a) Sales are not totalled because of variations in calorific (heat) value

Within the past decade the number of customers using natural gas has come to exceed those using manufactured gas, although the cheapness of the former had given it leadership in revenues and sales volume before then ("Other" includes mixed and liquified petroleum gas ) Even in the natural gas field, where low cost has made a powerful appeal to the industrial consumer, the residential consumer contributes substantially more to revenues ($529 to $315 million), although he uses only half the volume of gas The decline in the cost of gas brought about by the spread of natural gas pipelines made the competition with other fuels keen after World War II when inflation boosted the price of both coal and fuel oil

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[7] *Ibid*

[8] *Gas Facts—1948* (New York American Gas Association 1948), p 2

Cities, like Chicago, were unable to take on new customers desirous of shifting to gas for house heating Other cities, especially in the populous northeastern states, pressed for pipe-line extensions from the newer producer-states like Texas, Louisiana, and Oklahoma Something of the recency of the large use of natural gas from this area can be realized from the fact that Chicago was connected with the Texas Panhandle field by the first long-distance high-pressure pipe line of large diameter in 1931

**Technical aspects of gas production.** Manufactured gas requires the maintenance and operation of a central manufacturing plant, a central storage facility, and an extensive distribution system The manufacturing plant consists of an elaborately constructed "works," where the physical and chemical processes of gas generation are carried on more or less continuously The storage facility consists of a sizable gas holder, to which gas is conveyed as manufactured and upon which the distribution system draws for the satisfaction of consumer requirements The distribution system includes low-pressure mains, in some cases high-pressure transmission mains for distant conveyance, reducing stations, and service lines The nature of the production process, the nature of the demand for service, the size and layout of the city, all enter into the determination of the division of the capital investment between the "works" and the storage and distribution facilities. The investment in the storage and distribution facilities is usually double the investment in manufacturing plant and equipment

The gas industry today is organized technologically for the production of several kinds of gas, the most important of which are carbureted water gas, straight coal or coke oven gas, oil gas, and reformed natural gas The manufacture of coal gas consists of the destructive distillation of bituminous coal Coal is heated in retorts, which are in turn heated from without by coal, gas, or oil furnaces Gas, consisting chiefly of hydrogen, methane, and, to some extent, carbon monoxide, is drawn off, and a carbon residue, coke, is left This gas is passed through several purifying, condensing, and by-product-extracting processes, after which it is measured and conveyed to the gas holder The chief by-products are coke, tar and tar oils, and ammonia High-temperature carbonization yields larger quantities of gas, and the gas has larger hydrogen content and more by-product ammonia Low-temperature carbonization yields gas with higher calorific value and more by-product coke and tar On the average, under low-temperature carbonization, gas contains 45 per cent of hydrogen The problem of coal gas engineering consists in procuring the highest possible advantage from high-temperature carbonization in quantity and quality of gas and in by-product extraction A ton of coal under low-temperature carbonization can be expected to yield 400 cubic feet of gas Under high-temperature carbonization it can be expected to yield from 8,000 to 12,000 cubic feet of gas, about 1,300 pounds of coke, 12 gallons of tar, and 30 gallons of diluted ammonia

Coal gas manufacture is frequently supplemented within the establishment by water gas manufacture Carbureted water gas is often used to enrich coal gas from the standpoint of calorific value or candle power Water gas installations are frequently used to meet the requirements of peak loads and emergency demands upon the production system The water gas generating facilities can be set in operation within a relatively shorter time than can coal gas generating facilities

The manufacture of water gas involves the passing of steam over a bed of incandescent carbon in the form of coke, the chemical reaction resulting in the generation and combination of carbon monoxide and hydrogen This is known as "blue water gas" Blue gas possesses lower calorific and luminous value than is generally required for consumption purposes This deficiency is overcome by enriching or carbureting the blue gas through the generation of oil gas in combination Oil is sprayed into a hot carbureter, where it is converted into oil gas composed of hydrogen, methane, and other hydrocarbons The carbureted water gas then passes through purifying and condensing processes into a relief holder In some instances it is mixed with unpurified coal gas before purification Water gas generation is usually an intermittent process, because of the necessity for reheating the bed of coke after the "run," lasting about four minutes, followed by the "blow," a blast of air lasting about one minute The gas is collected during the "run" in the relief holder, and the delivery to the storage holder is thereby equalized

Where the relative cost of coal and oil permits, gas is often manufactured from oil Oil and steam are blown into the generating apparatus and an air blast is also admitted After a heating period of a few moments, gas is drawn off and passes on through purifiers to the holders Oil gas resembles coal gas more than water gas Its advantage lies in its luminous quality rather than in its calorific value The cost of oil, however, continues to present an economic obstacle to the development of oil gas generation[9] Natural gas may be substituted for oil to manufacture reformed natural gas

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[9] The preceding historical and technological sketch of the gas industry was furnished by Professor James P Adams, of Brown University

The rapid growth in the recent past of long distance pipe lines for the transmission of natural gas from oil fields to the large metropolitan centers has added new problems for the investor The companies that produce such gas are usually oil companies, but the transportation, which is a major cost factor, is generally undertaken by independent corporations, in which a gas utility may have an investment interest To the extent that natural gas instead of manufactured gas is sold to the consumer, investment in production facilities may be reduced and the customary plant turnover and operating ratio increased Since natural gas has greater heating value than manufactured gas, there has been a tendency toward the measurement of gas, not by cubic feet, as before, but by a unit of heating value, the therm

**Gas industry compared with electric power and light.** In many ways the gas industry is less flexible than the electric power and light industry A gas company, once established and equipped with a plant and mains, represents a relatively fixed investment, a point that is largely explainable by reference to the type of distribution system required Mains must be underground, whereas electric wires may be overhead, and thus the latter are more easily moved or extended for considerable distances A gas company, therefore, after certain limits of expansion have been reached, can extend its area of service only with difficulty, and it can make adjustments to the needs of its customers only within narrow limits Furthermore, it is uneconomical for a gas company to operate in cities below a certain size. In small communities, overhead cost of establishing the plant and laying the mains is often not justified by the amount of business the company can do On the other hand, those companies serving thickly populated areas enjoy the advantages of large-scale production, effective utilization of distribution facilities and, consequently, they enjoy both low production and low distributing costs

Because of this inflexibility it is especially necessary for the prospective investor to study the size and future prospects of the company in which he anticipates investing Companies located in areas whose population is declining, or in small and slowly developing communities, are not, as a rule, attractive The cost of distribution is often high for such companies and their opportunities of developing or of increasing profits are limited Furthermore, it is often impossible for such companies properly to diversify the types of customers to which they sell, with the result that the prosperity of the company is too often tied up with the fortunes of a few local industries, which may mean undue fluctuations in revenue from year to year

The operation of a gas plant does not involve quite the same problems in connection with the character of the demand for service as were found to exist in the electric light and power industry The problem of adjusting the capacity of a gas works to maximum demand is related essentially to its distribution facilities, and not to its plant The capacity of a gas plant is adjusted to meet the maximum daily demand on the basis of continuous operation, and not the maximum instantaneous load, as with an electric light and power plant When the production of a gas plant exceeds send-out, the excess is stored in the storage holder When send-out exceeds production, the distribution system draws upon the holder The *distribution* facilities, however, must be adjusted to meet the maximum instantaneous demand (usually measured as a maximum hourly demand) It is nevertheless true that gas companies can operate to better advantage where there is a high diversity factor among customers and where the maximum hourly demand approaches the average hourly demand over a 24-hour period

This load factor problem exists equally for the company supplying natural as well as manufactured gas Where gas is used for house heating as well as cooking, a heavy peak load occurs in the winter and varies with the intensity of the cold weather The heavy fixed costs incurred to build pipe lines for natural gas occupy the position of costs incurred for producer plant in manufactured gas To meet the problem of adverse load factor, the utility may (1) continue its manufactured gas plant as a standby facility to aid in carrying the winter load, (2) store gas in compressed or liquified form in underground cells in the off (or valley) season, and (3) develop off-peak consumption by industrial concerns through low rates for gas sold on an interruptible basis Such consumers may use gas in summer and oil in winter The residential consumer willing to use gas for such summer purposes as refrigeration, air conditioning, or hot water heating, is especially welcome

**Effect of competition with electricity** As previously suggested, the gas industry went through a rather severe test period in this country during the first two decades of the present century At the opening of the present century, gas was used largely for illuminating purposes The superiority of electricity, however, in respect to comfort, safety, and convenience, as well as to economy, caused a rapid transformation As a result, the gas industry lost a considerable market for its product, and this fact at the time made it appear that the industry might experience a permanent decline

The development of new home uses for gas and the rapid increase in industrial consumption, however, more than offset the market lost in the field of illumination During the first three decades of the present century, there was a very rapid and consistent growth in the volume of gas sold in this country, whether measured in terms of dollars or in millions of cubic feet of output, in spite of the competition of electricity The total increase in annual production from 1899 to 1929 was, in fact, more than 550 per cent[10] More recently the volume of manufactured gas business has shown growth but at a much slower rate, largely as a result of the rapid expansion of the natural gas division of the industry With the extension of natural gas pipe lines to northeastern metropolitan cities, manufactured gas production may have passed its peak production in 1947 An increasing proportion of output has been sold to industrial users An increase in the proportion of industrial consumption tends to make gross revenues more variable from year to year, home consumption fluctuates less in response to changes in business conditions

GROWTH OF MANUFACTURED GAS INDUSTRY

| *Year* | *Number of Establishments* | *Value of Product (000,000 omitted)* | *Quantity of Gas Produced M Cu Ft (000,000 omitted)* |
|---|---|---|---|
| 1899 | 877 | $ 76 | 67 |
| 1909 | 1296 | 167 | 151 |
| 1919 | 1022 | 329 | 344 |
| 1929 | 754* | 513 | 438 |
| 1935 | 520* | 345 | 342 |
| 1935 (a) | — | 315 | 341 |
| 1938 (a) | — | 298 | 324 |
| 1948 (a) | — | 463 | 524 |

* Until 1921 enterprises doing an annual business under $500 were omitted In 1921 the limit was raised to $5,000 In 1919 there were 74 reporting companies with an annual product between $500 and $5,000

The rapid increase in the use of natural gas and the shift of some manufacturing companies to that category since 1925 has altered the significance of the data in the later years

(a) American Gas Association series *Gas Facts*, 1948, pp 30, 128

**Analysis of gas companies. extent of utilization.** In the gas industry the "mile of main" is often used as a basis for studying the economic position of the industry in the community Population per mile of main and customers per mile of main, on the other hand, provide a measure of the effectiveness with which the company serves its territory If the population per mile of main is high, while customers per mile of main in a given case are relatively low, there is presumptive evidence that the selling efforts of the company have not been properly exerted, that prices are too high, or that the character of population is not conducive to satisfactory development On the other hand, high figures for both population and customers per mile of main suggest better development, but may indicate that the limit of rapid expansion has been reached Low population per mile of main usually means a sparse or poorly distributed population, a situation that often makes necessary a relatively high investment in distribution facilities

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[10] Based on data from *United States Bureau of Census Reports*

The number of meters per mile of main is the figure frequently used to measure the density of business This ratio has particular significance in the gas industry because of the relatively high investment required here in distribution facilities Meters per mile of main commonly run highest in the largest cities with dense population This relation is fortunate because the difficulties and cost of laying main is high in congested areas Ratios of this nature, however, should not be relied upon as conclusive evidence of the relative merits of a given company, for at best they merely indicate possible situations that should be verified by further study

**Financial analysis of gas companies.** Financial analysis of capital structure proportions, coverage of fixed and contingent charges, plant turnover, the operating ratio, and other relationships, follow along the lines previously discussed for electric utilities[11] A very large part of the gas distribution business is handled by electric companies and not readily subject to separate analysis Companies engaged solely in the distribution of manufactured gas have had a less satisfactory record than electric utilities However, their troubles have generally been confined to occasional suspension of dividends, and bondholders have ordinarily fared well The introduction of natural gas on a large scale from the oil fields of Texas and nearby states has provided a low-cost source of energy that has helped to restore the earnings and growth possibilities for the distributing utilities In some cases the common stocks of manufactured gas companies earning less than a fair return have enjoyed substantial appreciation after introducing natural gas

The pipe line transmission companies have experienced a tremendous expansion of investment and have come to enjoy such public confidence that institutional investors have loaned beyond the conventional utility debt limits—as much as three quarters to four fifths of the sums required[12] The soundness of this heavy debt rests upon long-term contracts with distributing utilities on the one hand and with producers on the other Such contracts may run for a 20-year period and arrangement may be made for complete repayment of indebtedness within that time With plentiful natural gas and an unsated demand, the situation has been most satisfactory However, the price of competing fuels—fuel oil and coal—should be watched for any change in their relative competitive position Lower coal prices, either through price level deflation or mechanization of mining, would reduce the margin of advantage. Moreover, with time, the economic tendency will be to seek out additional gas supplies and more distant markets with a resultant need for higher costs to the consumer

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[11] Convenient sources of average relationships for both manufactured and natural gas companies, and for natural gas transmission (pipe line) companies are the American Gas Association's *Gas Facts* (annual) and the general information section of *Moody's Manual of Investments, Public Utilities* (annual)

Natural gas producers are regarded much as petroleum companies, that is, industrial companies with an exhaustible asset but nevertheless selling an essential consumer good that should enjoy a relatively stable demand, at least so far as the residential consumer is concerned Most of our natural gas comes from wells owned by oil companies[13] Investors must recoup their principal from such investments during the life of the property

Even though the useful life of pipe lines may be extended by later discoveries of additional supplies, any senior obligations should not be obliged to speculate on that possibility but be repaid well within the estimated life of reserves known at the time of financing Probably natural gas distribution companies should also aim at a relatively early debt repayment Once they have expanded their markets on the basis of low-cost natural gas, they would undoubtedly suffer contraction pains if a return to higher cost manufactured gas were necessary While this situation seems a distant contingency at present, the investor, especially the institutional investor, must take a long view

Those interested in this field will need to familiarize themselves with the developing regulatory policies of the Federal Power Commission, which, under the Natural Gas Act, regulates the interstate activities which are beyond the reach of the state commissions The intrastate operations of producers are deemed exempt under this Act, although there is a twilight zone between the production and gathering and the transportation of natural gas, where further definition of the Commission's powers remains to be clarified[14]

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[12] This financing is discussed in "Huge Reserves Back Gas Pipe Line Bonds," *Barron's*, December 26, 1949, p 31

[13] Examples of the exceptional company that is interested in distribution, transmission, and production may be found in the Columbia Gas System, Inc, and the People's Gas Light & Coke Company (Chicago)

## Transit Industry

The transit industry consists primarily of local passenger transportation by streetcars, buses, and trolley coaches, as well as by subway or elevated railway Until recent years, it was customary to refer to this field as the electric railway industry Until the 1920's, it included a substantial investment in interurban lines, which were gradually displaced by bus systems The similar but slower rise of the bus for local transportation made a broader term more suitable for the business

Prior to World War I electric railways had a rapid growth, as may be seen in the accompanying figures

ELECTRIC RAILWAY INDUSTRY

| *Year* | *Number of Companies* | *Miles of Track* |
|---|---|---|
| 1890 | 789 | 8,123 |
| 1902 | 987 | 22,577 |
| 1912 | 1,260 | 41,065 |
| 1917 | 1,307 | 44,835 |

Source *Statistical Abstract of the United States,* 1930, p 422 Much of the mileage operated in 1890 was adapted to horse cars

After about 1915, rising costs resulting from the rising price level created financial troubles Fares were hard to change and sometimes were fixed at five cents by franchises The ensuing decade of the 1920's was also marked by the extraordinary rise of the private automobile, which halted traffic growth for larger cities and reduced it for smaller communities An idea of the investment havoc wrought by these factors may be gained from the following record of receiverships down to the 1940's on the next page

In many large cities, the financial weakness of these companies, coupled with an unwillingness to raise fares to a level that would make them financially sound, led to municipal ownership Local transportation is important to the maintenance of real estate values, especially for central shopping districts, and of the economic life of the community With municipal ownership, the expense of taxes was typically eliminated, and in some cities, like New

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[14] Falvey, John F, "FPC Spells Out Gas Industry's Future," *Barron's,* May 10, 1948, p 31, and Abrams, E R, "Court Rebuff Defines FPC Gas Jurisdiction," *Barron's,* October 10, 1949, p 14

### ELECTRIC RAILWAYS PLACED UNDER RECEIVERSHIP 1910–1939*

(Five-Year Annual Averages)

| Years | Number of Companies | Number of Miles of Track | OUTSTANDING SECURITIES Stocks (Thousands of Dollars) | Bonds (Thousands of Dollars) |
|---|---|---|---|---|
| 1910–1914 | 17 | 459 | 25,829 | 38,384 |
| 1915–1919 | 29 | 1,753 | 77,994 | 112,318 |
| 1920–1924 | 15 | 842 | 24,579 | 36,143 |
| 1925–1929 | 11 | 775 | 23,512 | 47,611 |
| 1930–1934 | 13 | 1,441 | 68,085 | 132,366 |
| 1935–1939 | 5 | 432 | 18,159 | 31,083 |

* *Statistical Abstract of the United States*, 1934, p 374, 1939, p 427, *Transit Journal*, Annual Statistical Number, January, 1940, p 20

York, financing was through bonds backed by the full credit of the municipality Sometimes the result was a deficit that had to be borne by the general taxpayer, although the general objective was to make the transit system self-supporting

World War II with its gasoline rationing, cessation of automobile production, and extraordinarily high level of industrial production, lifted traffic, revenue, and earnings for the industry This satisfactory condition ended with the war, although many companies retained some of their traffic gains Price inflation following the war made it difficult to keep revenues ahead of rising expenses, even though fare increases were common

**Economics of the industry.** Only a few very large cities with a dense population are able to provide a sufficiently heavy traffic to justify the larger investment per mile required to finance a subway or elevated system. Where heavy traffic does exist, no other transport permits such rapid movement To move such traffic by bus or automobile would mean intolerable congestion in an already difficult situation Even an electric railway operating on the street level calls for a substantial traffic volume to permit the necessary investment in rails, paving, trolley system, and heavy equipment The problem of large fixed expenses incident to such investment is made more difficult by a poor load factor resulting from concentration of riding as the working population moves to and from its jobs in the morning and late afternoon When the volume of riders shrank after 1930, the bus became a more and more logical vehicle because of its smaller investment and flexibility in following changing traffic movements The trolley coach or bus using electric power from an overhead line meant less investment than an electric railway and yet could carry heavy loads Like the gasoline-powered bus, it was more maneuverable in traffic and could pull over to the curb to pick up passengers with greater safety than in mid-street[15]

Something of the recent trends that have resulted from the factors mentioned in the preceding discussion may be seen in the over-all figures of mileage, equipment units, and revenues for the industry

TRANSIT INDUSTRY–MILEAGE, EQUIPMENT, AND REVENUES

1938, 1948

| | *Mileage* | | *Equipment Units* | | *Gross Revenues ($ Million)* | |
|---|---|---|---|---|---|---|
| | *1938* | *1948* | *1938* | *1948* | *1938* | *1948* |
| Electric railway | | | | | | |
| Surface | 20,500 | 11,742 | 31,400 | 17,911 | 340 | 472 |
| Subway & elev | 1,300 | 1,251 | 11,205 | 9,456 | 131 | 194 |
| Motorbus | 70,400 | 96,473 | 28,500 | 58,540 | 211 | 732 |
| Trolley coach | 1,398 | 3,017 | 2,032 | 5,708 | 19 | 90 |

Source American Transit Association, *Transit Fact Book*, 1949 Includes municipal systems

**Transit company analysis** The same general financial-statement relationships will be studied as in the case of other public utilities Companies will differ, however, depending upon the type of equipment employed and their financial health The heavier the property investment in relation to revenues, the lower the operating ratio necessary to permit an adequate margin of earnings to provide a return on that investment Where operations are conducted wholly with motorbuses, the investment will be as low as, and financial ratios will show many similarities to, those of industrial companies Unlike industrials, they will generally operate as "monopolies" and be regulated in such matters as rates, service, securities, and accounting

Our great metropolitan centers where high investment facilities are needed have typically moved to municipal ownership Except where such a municipality uses revenue bonds, as in Chicago, that depend upon the utility's earnings, financial analysis is not required because of reliance upon municipal credit and the taxpayer (Such issues are discussed in Chapter 20 )

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[15] These general conclusions can be read from figures showing the numbers of passengers carried in different types of equipment in cities of different population size Subway and elevated service is confined to cities with population of more than a million The same population group shows the largest use of surface electric railways The trolley coach shows its largest use in the cities between 250,000 and 500,000 population Although the largest volume carried by motorbuses is in the cities over 1,000,000, a secondary peak is in the cities group of 100–250,000 population, with the groups on either side close rivals *Transit Fact Book, 1948* (New York American Transit Association 1949), p. 18

Nonfinancial information to be considered will parallel that suggested for other utilities Special attention will be paid to franchises and regulatory atmosphere in this field Regulatory treatment during the years immediately following World War II when inflation was lifting operating costs provided a good test for effective cooperation between commissions and companies An example of the most vexatious type of situation can be traced in the experience of the Third Avenue Transit Corporation operating in New York City, where the field is dominated by a municipal system Even where such competition did not exist, rate problems were often serious, as in the case of Twin City Rapid Transit Company, serving Minneapolis and St Paul largely with an electric railway service On the other hand, a number of the bus systems, as typified by the National City Lines, Inc , serving a number of cities, secured relatively prompt and effective relief

The study of the traffic position and outlook of the particular transit company should go beyond an examination of population trends and riding habits as reflected in "rides per capita per annum " It should seek to envisage the part the company plays in moving workers and customers to shopping centers and factories and how essential it is likely to be in the future Is the service rendered with reasonable dispatch and with economy in equipment that is reasonably abreast of the times in speed and comfort? A good transit system reduces considerably the distressing congestion created by mass movements of individuals in their private automobiles It also reduces parking problems Adequate annual reports to stockholders can help the investment analyst to study these factors

**Municipal versus private operations.** Although the operations of New York City's municipal system are unique, they illustrate a number of the possible differences that may be found in comparing municipal with private operations To avoid misunderstanding, it should be clearly noted that some municipal systems use

STATEMENT OF OPERATIONS

For Fiscal Years Ended June 30

(Millions)

| *Year* | *Revenues* | *Expenses* | *Balance* |
|---|---|---|---|
| 1946 | $130 0 | $121 9 | $ 8 1 |
| 1947 | 135 0 | 151 8 | *16 8* (def ) |
| 1948 | 138 0 | 168 6 | *30 6* (def ) |
| 1949 | 214 9 | 201 5 | 13 4 |

Source City of New York Board of Transportation, *Report for 1949*, p 100 Details are given in this report

report forms that much more closely approximate the conventional balance sheet and income account of the private company.

The reader examining the details in the original report sees the same postwar rise in expenses that afflicted private companies. Wages were stated to have risen 57 per cent over 1941. Only after a hotly contested debate did the city give up its political shibboleth of a five-cent fare, which would have meant a deficit of from $60 to $70 million in 1949 if continued. Rapid transit fares were raised from five to ten cents and surface lines to seven cents on July 1, 1948.

Important differences from private companies may be seen in studying the detailed statement. Three items are absent: (1) depreciation, (2) taxes, and (3) capital charges. While a statement showing depreciation is desirable, it may be argued that a rough financial equivalent exists in a program of debt retirement, which in 1949 had reached a figure of $18.8 million. In the absence of a balance sheet showing depreciable property, this amount may be compared with the gross outstanding debt of $1,195 million. Thus, debt retirements equalled 1.6 per cent of total debt. The importance of taxes for transit utilities varies, but the figure for a private system is given below, where it totalled 11.9 per cent of gross revenues. In contrast to New York's tax-free municipal system, the privately owned Third Avenue Transit Corporation of the same city was required to pay $2.8 million, or 12.3 per cent of its revenues, for local taxes and franchises at a time (1948) when its revenues fell short of covering operating expenses. The interest charges on New York City's Transit debt amounted to $41.1 million in fiscal 1949, which means that the taxpayer was still burdened with a part of the cost of providing transportation service at a time when it was reporting a "balance in excess of operating expenses."[16]

The consolidated income account (condensed here) of the National City Lines, Inc., may be offered as indicating relationships for a transit company operating almost exclusively with motorbuses.

Typical of this form of transit is the lower ratio of investment to revenues. Gross property was only $0.87 per dollar of revenues. The amount was probably below normal because of the tendency for the cost of property shown in the balance sheet to lag in its adjustment to higher prices during inflation behind operating

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[16] A short statistical comparison of important differences between municipal and private bus systems is given in "What are the Facts about Municipally Owned Transit?" *Bus Transportation*, January, 1950, pp. 40–45.

NATIONAL CITY LINES, INC.
CONSOLIDATED STATEMENT OF INCOME

| | *(Millions)* | | *(Per Cents)* | |
|---|---|---|---|---|
| | *1948* | *1947* | *1948* | *1947* |
| Operating revenues | $32.1 | $29.5 | 100.0 | 100.0 |
| Operating expenses | | | | |
| Transportation | 13.8 | 12.8 | 42.9 | 43.4 |
| Maintenance | 4.9 | 5.0 | 15.2 | 17.1 |
| Depreciation | 2.4 | 2.0 | 7.6 | 6.9 |
| Taxes (excl. fed. income) | 2.5 | 2.4 | 7.7 | 8.1 |
| Other | 4.7 | 4.6 | 14.8 | 15.3 |
| | $28.3 | $26.8 | 88.2 | 90.8 |
| Operating income | 3.8 | 2.7 | 11.8 | 9.2 |
| Other income | .9 | 1.2 | 2.7 | 4.1 |
| Interest charges | .4 | .3 | 1.1 | 1.0 |
| Federal income taxes | 1.4 | 1.2 | 4.2 | 4.2 |
| Net income | 2.9 | 2.4 | 9.2 | 8.1 |

Source: *Annual Report for 1948*, p. 12.

expenses and revenues. Depreciation tends to run high relative to gross property investment because of the relatively short life of motor coach equipment, in this case 8.7 per cent. Similarly, the accumulated reserve for depreciation often is high in relation to gross property. In 1948 the $11.3 million accumulated depreciation was 40 per cent of the $27.9 million of property.

As for the capital structure, the debt other than ordinary current liabilities consists of equipment and other term obligations to banks, except for minor real estate mortgages. This bank debt constituted 43 per cent of capital structure. $2.6 millions of it was payable within one year, a figure that about equalled the $2.4 million depreciation expenses for that year (1948). Such a company can meet principal retirements and interest out of current receipts even though net earnings should recede to the point where net income for the stockholders was zero. The amount equal to the depreciation allowance, a bookkeeping write-down rather than a cash expense, when collected from customers can be used for debt reduction instead of replacements. The 1949 rate of repayment would retire all the bank debt within five to six years. The air transport industry, generally classed in the "industrial" field, has a number of economic, financial, and regulatory similarities to this branch of the transit utility field. It, too, has a major investment in equipment that depreciates rapidly, and the large allowances for depreciation must be considered in studying ability to repay debt.

**Conclusions** From the foregoing discussion, the conclusion can be drawn that the transit industry has variable financial ratios depending upon the form of transportation used In the largest cities the heavy investment and the desire to keep fares low has led to municipal ownership which may, in effect, subsidize operations by relieving the business from taxes, and, in some cases, making the taxpayer bear the risk of financial failure Where municipalization is not motivated by political considerations or a desire to move in the direction of socialism, it may be argued as necessary for the preservation of real estate values upon which local taxation leans so heavily and as a service for the lowest income workers The last argument is strengthened by comparison with the government aid to highways for automobiles, which represent a more expensive form of transport

In communities where traffic is lighter, the bus, which requires much less capital investment, has taken the place of the street railway The securities of bus companies are generally classed as the most speculative of utility issues Actually many of the economic characteristics of their business, such as higher capital turnover and operating ratio, resemble those of the industrials Each company and security should receive individual consideration Ability to hold traffic, to earn a reasonable return, and to provide comfortable modern equipment through an adequate program of replacement are essentials of a sound company, whether a street railway or a bus company

## Water Companies

**General.** The supplying of water is one of the oldest forms of utility service Important as the industry is to the public, it does not occupy a commensurate place in the field of investment In many communities, particularly in the larger ones, water systems are owned and operated by the municipality itself Accordingly, most of the privately owned water works that exist in this country are found in small communities Only nine cities of the United States with a population in excess of 100,000 now have privately owned plants (A few other private companies serve areas or groups of communities with this population total) Furthermore, even in smaller cities, there is a tendency toward municipal ownership Where private water companies operate, an unsatisfactory political situation sometimes reacts on the popularity of the security

**Sources of supply; territory; population.** In an examination of the securities of privately owned water companies, the recommended procedure is much the same, in general outline, as that suggested for other utility companies One should start first with a study of those broader elements of the situation, such as sources of supply, territorial characteristics, and population One of the most important factors that make for stability in the earnings of water companies is an adequate supply of pure water It is true that impure water may be made satisfactory by the use of filtration plants, but the process involved adds to production costs The five most common sources of water supply are as follows lakes, ponds, springs, rivers, and artesian wells It is of the utmost importance that the supply, whatever its source, be constant With lakes, ponds, and rivers, much depends upon the drainage and the regularity of rainfall in the area served Where the rainfall is irregular, adequate reservoir facilities are necessary to assure supply during times of drought With artesian wells, there is less dependence on rainfall, yet a sustained drought may jeopardize this supply also

The nature of the territory served by the water system is also an important factor to analyze Here our interest lies in the extent to which gravity, instead of a pumping plant, may be used as a means of distribution The nature of the soil and the character of the topography also make a difference in the cost of installing and maintaining mains The density and average per capita wealth of the population in the area served will determine the extent to which plant and equipment can be utilized profitably Plants serving sparsely settled territories naturally require a much heavier investment in relation to sales than do thickly populated areas Similarly, wealthy communities use more water per capita than do poorer ones The problem of distribution for water companies is similar to that for gas companies, and it is possible to work out the same kind of data on density and utilization for the former as was done for the latter For example, in comparing one company with another, "customers per mile of main," "population per mile of main," or sales (either in terms of dollars or cubic feet of water) will all prove useful ratios

**Capitalization statistics** Similar investigation may be made in respect to capitalization Thus, we may compare the capitalization "per mile of main," "per thousand cubic feet of water sold," "per dollar of gross revenue," or "per customer" of different companies Larger cities can safely show a somewhat higher capitalization if the use of water is greater per customer

Most of the investment in water companies is fixed, and because of the marked stability of earnings, one may expect to find a relatively high ratio of bonds to stock equity among such companies. In spite of stable demand, price inflation sometimes depresses earnings, as during the years following World War II.[17] Normally, operating ratios will be low for such companies, because very little labor is required except that used in connection with maintenance and repairs. The fact that so large a part of the cost of water service is for the use of capital and that municipal credit commands a lower interest cost than does private corporate credit largely explains why this field is favorable to municipal ownership.

**Maintenance and depreciation.** The problem of maintenance and depreciation is present in the case of water companies as in that of other public utilities. While depreciation of a water plant may be slow, it is nevertheless sure. However, the aggregate depreciation rate to be applied in different companies will vary. If one company is required to operate an elaborate pumping plant while another depends upon gravity, the former may be expected to have a higher depreciation rate than the latter. In any event, depreciation is recognized by the courts as a legitimate charge against earnings of water companies no less than of other utilities.[18]

**Investment risk and the franchise.** In addition to the inflation hazard mentioned above, there is the possible threat of condemnation proceedings by a municipality desirous of taking over a private company's property. Water companies supply the most necessary of all utility services and unquestionably enjoy the greatest stability of demand for their product. There is no substitution for the products of the water company. Fluctuation in earnings arising from decline in demand are almost unknown. In fact, growth, ordinarily a welcome investment characteristic, is sometimes unwelcome to a water company because it means adding

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[17] For a statement of the problem, see Ely, Owen, "Earnings Dilemma of the 'Stable' Water Companies," *Public Utilities Fortnightly*, July 7, 1949, p. 37. The following changes between 1910 and 1949 were presented for the Jamaica Water Supply Company in a rate case:

| | |
|---|---|
| Materials (unit costs) | +108% |
| Federal income taxes | + 96 |
| Labor | + 71 |
| Electric | + 17 |
| Water rates | 0 |
| Net operating income | − 23 |
| Balance for common stock | − 76 |

[18] Knoxville v. Knoxville Water Company, 212 U. S. 1, 14, 29 Sup. Ct. 148, 152, 53 L. Ed. 371, Des Moines Water Co. v. City of Des Moines, 192 Fed. 193. Although the matter at issue in the Knoxville case was the right of a company to charge depreciation, the case is often cited to show the attitude of the courts toward depreciation in general.

high cost facilities to care for the increased demand or because additional water supply may be difficult to obtain Some growing communities, notably in the southwest, have been outstripping their natural water supply

The existence of a long-term franchise is not necessarily a protection against possible confiscation, because a municipality may take over property by condemnation and obtain an unfairly low valuation in the settlement A more desirable situation is that in which the franchise contains a clause defining the exact conditions under which the city may purchase the property There is then less likelihood of a dispute over the price and terms of acquiring the property

The danger of confiscation is, of course, minimized where rates are equitable and reasonable Where a high rate is necessary to enable the company to show a proper return on its capital, the situation is undesirable, inasmuch as high rates, regardless of the ultimate return afforded, engender a feeling of hostility Where rates and the resulting return are both reasonable, private operation may be tolerated for an indefinite period

**Market for water company securities.** Bonds of private water companies, and particularly stocks of independently operated water companies, are not a well-known type of investment. The market for such securities is therefore narrow Nevertheless, issues of the better-managed companies ordinarily sell on as favorable a basis as other utility issues, often because of the local demand that exists for such securities It cannot be said, however, that the bonds of smaller water companies in distant locations are an attractive investment for the average investor It is true that there may be a minimum of investment risk, yet a definite knowledge of this fact cannot always be easily established, and the outsider may pay a premium to account for a local prejudice in favor of the issue In a particular case, local politics or contested features in the franchise may create risk that may prove disagreeable to the outside investor, and that the local investor is often in a much better position to anticipate because he is able to keep constantly in touch with the changing situation

## Telephone and Telegraph Companies

**Organization of the industry.** The telephone field in the United States is dominated by the American Telephone & Telegraph Company, and practically all the telegraph business of the country is controlled by the Western Union Telegraph Company The

American Telephone & Telegraph Company at one time owned about one fifth of the total common stock of the Western Union Telegraph Company and attempted to coordinate the activities of the two companies, but was obliged to abandon this plan in 1913 on account of the attitude of the Government.[19] At the present time there is no connection between these two companies.

**Development of the telephone.** The telephone industry in this country has shown a remarkable development. The figures in the table on this page show this growth as reflected in the number of telephones, operating revenues, and investment in plant and equipment.

GROWTH OF THE TELEPHONE INDUSTRY 1902–1947*

(000 Omitted)

| *Year* | *Number of Telephones* | *Operating Revenues* | *Plant & Equipment* |
|---|---|---|---|
| 1902 | 2,371 | $ 82,651 | $ 389,278 |
| 1907 | 6,119 | 177,888 | 820,417 |
| 1912 | 8,730 | 244,476 | 1,081,433 |
| 1917 | 11,717 | 382,830 | 1,492,329 |
| 1922 | 14,347 | 665,568 | 2,205,183 |
| 1927 | 18,523 | 1,023,574 | 3,548,875 |
| 1932 | 17,424 | 1,061,530 | 4,791,903 |
| 1937 | 19,424 | 1,180,028 | 5,000,456 |
| | CLASS A COMPANIES ONLY | | |
| 1937 | 17,035 | 1,140,096 | 4,687,695 |
| 1947 | 31,277 | 2,397,629 | 7,786,202 |

* *Moody's Manual of Investments, Public Utilities, 1949*, p. a57.

Almost all telephones are connected with the long distance network of the Bell system (American Telephone & Telegraph Company), and about 80 per cent of all telephones in service belong to subsidiaries of the system. Any discussion of telephone securities must deal very largely with the Bell system, which consists of the American Telephone & Telegraph Company and associated companies.

**Analysis of American Telephone & Telegraph Company.** The American Telephone & Telegraph Company conducts the bulk of its system's operations through 19 regional operating companies, which cover the United States. As a holding company it owns almost all the common stock of these, a large majority of three more, and a substantial minority interest in two "associated" companies, the Southern New England Telephone Company and the Cincinnati and Suburban Bell Telephone Company An interest is also owned in Canadian and Cuban telephone companies The toll lines that link the system together are directly owned and operated The Company also owns practically all the stock of the Western Electric Company, which manufactures equipment and supplies

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[19] Stehman, J. W., *The Financial History of the American Telephone & Telegraph Co.* (Boston: Houghton Mifflin Co., 1925), pp. 147–154.

The income that the American Telephone & Telegraph Company receives, therefore, consists of dividends and interest paid on its security holdings, and of payments received for services rendered under contracts with subsidiary companies, which services include the furnishing and maintaining of telephone instruments, provision for interconnections between regional operating companies by long distance lines, short-time as well as permanent financing, developmental research, and patent protection in connection with the art of telephony As with holding companies in general, here also we must consider real earnings to be, not the dividends and interest received from securities of subsidiaries owned, but the proportionate equity in undistributed earnings of subsidiaries

**Financial condition of parent company** Earnings of the parent company have shown a consistent and fairly regular annual increase for many years, as might be expected from the dominant position of the company and the data given above The expansion of earnings for the common stock equity may be seen by decades from the following table.

NET INCOME AND DIVIDENDS PAID*

| *Year* | *Net Income*† | *Dividends Paid* |
|---|---|---|
| 1900 | $ 5,486,058 | $ 4,078,601 |
| 1910 | 26 855,893 | 20,776,822 |
| 1920 | 51,821,216 | 35,376,793 |
| 1930 | 165,544,707 | 139,238,073 |
| 1940 | 188,344,032 | 168,181,146 |
| 1948 | 207,617,760 | 203,101,621 |

* Compiled from annual reports
† Net income of holding company, not consolidated

This growth has been balanced by regular increases in the number of shares outstanding In only two years between 1900 and 1930 were there any decreases in net profits in 1906 and in 1914 slight recessions were registered The record has been more fluctuating since then, with recessions in income in the early 1930's, in 1938, and again in the early 1940's under the impact of heavy war taxation The management has aimed at stability and investment standing for its common stock, and consequently the record shows no spectacular stock dividends or split-ups. The dividend record has been kept steadily at $9 per share since 1921. However, there have been opportunities from time to time for subscription to new stock on a favorable basis. In the years of depressed earnings, surplus has been drawn upon to maintain a regular dividend rate, as shown in the following table:

AMERICAN TELEPHONE & TELEGRAPH COMPANY

PER SHARE EARNINGS[*]

| Year | *Consolidated System* | *Holding Company* | *Dividends per Share* |
|---|---|---|---|
| 1948 | $ 9.86 | $ 9.20 | $9.00 |
| 1947 | 7.66 | 7.43 | 9.00 |
| 1946 | 10.23 | 9.42 | 9.00 |
| 1945 | 8.93 | 8.66 | 9.00 |
| 1940 | 11.26 | 10.08 | 9.00 |
| 1933 | 5.39 | 7.37 | 9.00 |
| 1930 | 10.26 | 10.44 | 9.00 |

[*] On average shares outstanding.

The maintenance of dividends from previously accumulated surplus is a sound policy so long as it does not reduce the working capital position unduly and does not exceed average or long-run earnings. Such a policy is much appreciated by a legion of stockholders, small and large. The strength of the capital structure position may be judged from the fact that the bond interest of the American Telephone & Telegraph Company, when added to the interest and preferred dividends of subsidiaries, was earned over three times even in 1933.

The monopolistic character of the industry, the vitally important part it plays in our economic structure, its favorable public relations and conservative policies which should result in reasonable regulation, and its splendid financial record, all combine to give the securities of the company a high rating at the present time.

**Subsidiary company investments.** In analyzing the securities of the subsidiary companies of the Bell System, it is necessary to determine the past earning record of the company under consideration, its opportunities for growth, the attitude of local regulatory bodies, and its capital structure. The bulk of the underlying securities are bonds of the subsidiaries and enjoy very high ratings. One subsidiary, Pacific Telephone & Telegraph, has a noncallable preferred issue that rates high as a result of large margins of assets and earnings, even though it is junior to bonds. A few of the subsidiaries, particularly New England Telephone & Telegraph, Mountain States Telephone & Telegraph, and Pacific Telephone & Telegraph, have, in the hands of the public, common stocks that also rate well

**Independents limited.** While there are a number of independent telephone companies in the United States, they operate only a limited number of the country's total stations Investments in such companies should be made cautiously and only after a careful survey of the territory in which they operate and of their relations with the Bell system, and a thorough study of their earnings and capital structure An analysis of maintenance and depreciation policy is particularly important It is generally true that small independent companies—that is, companies with a gross income of less than $1,000,000—are at a distinct disadvantage in respect to overhead costs and consequently do not offer satisfactory opportunities for investment

**Telegraphs** Since the merger with Postal Telegraph, Inc , in 1943, the Western Union Telegraph Company became practically the sole operator of land telegraph lines in the United States There are a few smaller companies engaged in radio telegraph and cable operations that serve chiefly in international communication. Not only does Western Union blanket the country with its telegraph service, but through its cable system and connections telegraph communication is established with all parts of the world The magnitude of the company is indicated by the fact that at the

OPERATING RESULTS OF WESTERN UNION TELEGRAPH COMPANY 1926–1948*

| *Year* | *Oper Gross Revenues (000 Omitted)* | *Total Income (000 Omitted)* | *Bond Interest (000 Omitted)* | PER SHARE *Earned* | PER SHARE *Paid* |
|---|---|---|---|---|---|
| 1948 | $191,654 | $ 1,458 | $3 725 | *$1 53* (*def*) | $1 00 |
| 1947 | 207,057 | 12,453 | 4 032 | 7 44 | — |
| 1946 | 183,029 | *7,091* (*def*) | 3,909 | *91* (*def*) | — |
| 1945 | 192,892 | 8,345 | 3,910 | 3 64 | 2 00 |
| 1941 | 114,084 | 11,334 | 3,968 | 7 05 | 2 00 |
| 1938 | 91,712 | 2,551 | 4,188 | *1 57* (*def*) | — |
| 1937 | 100,483 | 7,721 | 4,395 | 3 18 | 2 25 |
| 1932 | 83,014 | 7,663 | 5,356 | *0 81* (*def*) | 2 50 |
| 1929 | 145,667 | 19,085 | 3,610 | 15 12 | 8 00 |
| 1926 | 134,465 | 17,631 | 2,426 | 15 24 | 8 00 |

* Standard Statistics Co , *Corporation Descriptions*

end of 1948 the system comprised 119,125 miles of pole lines, 4,469 miles of land cable, 30,335 nautical miles of ocean cables, and 17,460 telegraph offices Total miles of wire operated approximated 1,247,249 [20]

Formerly a very strong company, the earnings have been poor and variable since 1930 Dividends have had to be omitted in a number of years since then, where formerly the dividend record was excellent The passing of the dividend in 1932 terminated a 59-year record of continuous payments However, the company, recognizing changed conditions, has steadily reduced funded debt and bank loans, as suggested by the declining interest charges in the accompanying table, showing operating results for selected years, that enables the reader to judge the range of fluctuations between good and bad years Between 1939 and 1948, long-term debt was reduced from $87,448,000 to $69,095,000, in spite of a Reconstruction Finance Corporation loan of $9,500,000 incurred in 1947 in connection with its plant improvement program Large depreciation allowances, in recent years amounting to $14,798,000 in 1948, help to explain the company's ability to achieve plant modernization and debt retirement on a scale not apparent from the net income figures shown in the table

Although a monopoly in name, competition from substitute forms of communication, chiefly telephone and airmail, have kept the company under heavy pressure Rising labor costs have also been a problem The company has made strenuous efforts to promote the use of telegraphic service, to mechanize operations, and to develop auxiliary services, such as the telefax device to transmit facsimile messages Western Union is an excellent case for investment study for two reasons It demonstrates the danger of accepting the idea that because a company has a long record of excellent performance, it can be assumed that risk is absent or virtually so The investor must be constantly alert to the hazards resulting from technological change It also illustrates the fallacy of believing that a "monopoly" is always able to extract monopoly profits There has been much loose argument in economic and political circles about monopoly based upon the size and dominance of one or a few companies in various industries, with too little reference to the actual return achieved by the investor over substantial periods of years

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[20] *Standard Corporation Descriptions*

# 13

# Railroad Securities—General

**Importance of railroad securities in American finance** Railroads were the first group of corporations to achieve large public interest for their securities Until the depression of the 1930's their bonds held first place in the opinion of conservative investors Public utility bonds, which have come to usurp this position, arrived on the scene much later Industrial securities had only a limited public following until the great merger movement that took place around the turn of the century, and industrial stocks did not have a really broad distribution until after World War I But, even though the hardships of the 1930's have greatly damaged their position, railroad securities still occupy an important place among American corporate securities

**Capital requirements of the railway industry.** The total par value of all railroad securities outstanding at the end of 1948, according to the Interstate Commerce Commission, was $16,004,208,000, of which $9 billion was bonds, equipment obligations, and other funded securities, and $7 billion was stock Only in recent years has the volume of railroad securities failed to exceed that of utility securities The following table shows the nominal or par amount of securities outstanding for the year 1946 and also, by adding in the surplus, the total book value of the three major divisions of corporate securities

The utilities include a number of subdivisions, and although the largest of these, the electric light and power industry, is gaining in size, it does not yet exceed the steam railroads in book investment The "industrial" division covers an even wider variety of industries, including manufacturing, mining, and merchandising fields

BOOK VALUE OF OUTSTANDING SECURITIES OF NONFINANCIAL CORPORATIONS, 1946*

(Millions of Dollars)

| | *Railroads*† | | *Utilities* | | *Industrials* | |
|---|---|---|---|---|---|---|
| Bonded debt | $8,626 | 40.4% | $12,837 | 36.9% | $10,796 | 10.5% |
| Preferred stock | 1,836 | 8.6 | 2,615 | 7.5 | 7,850 | 7.6 |
| Common stock | 6,200 | 29.0 | 13,313 | 38.3 | 33,172 | 32.3 |
| Surplus | 4,681 | 21.9 | 6,004 | 17.3 | 50,831 | 49.5 |
| | $21,343 | 100.0 | $34,769 | 100.0 | $102,649 | 100.0 |

* Estimates compiled from U.S. Treasury Dept., *Statistics of Income for 1946*, and Interstate Commerce Commission, *Statistics of Railways in the U.S., 1946*.
† Class I roads only.

**Stability of railway earnings.** Reasons other than mere size are necessary, however, to account for the former status of railway securities as premier investments. The services that the principal carriers of this country rendered were, and are, indispensable.[1] For this reason, the railroad industry was believed to have a certain stability in earnings and property values, characteristic of most public utility industries, but lacking in most industrial enterprises, which may be displaced by competing units. Until the 1920's, railroads were also enjoying steady growth, which tended to offset the forces of contraction in a period of business depression. Railroad traffic and earnings have always fluctuated in sympathy with business conditions, but since 1930 they have been most seriously affected by adverse conditions. As a result, railroad securities have largely lost the attraction that they enjoyed a few years ago as investment media, even though individual securities rank high.

**Desirability of commission control.** Because of their public utility character, the railroads are regarded as natural objects of commission control. Under such control unification is possible, permitting the economies of large-scale operation, yet the public is safeguarded against unreasonable rates. The legal justifications for legislative or commission control of public utility enterprises have already been discussed at length in previous chapters and will not be reiterated at this point, for the same arguments apply to the railroad industry as apply to public utilities.[2] The era of competitive railroad building is long since past, although the idea of competition has not been entirely discarded, and mergers of competing lines are still looked upon askance. Nevertheless, rate changes are now initiated, not only by the roads, but by the Interstate Commerce Commission, and such competition as is effected, therefore, must be in matters of service, not of charges Consequently railroads are not subject to the same forces of direct competition that are found among industrial enterprises They suffer more from the indirect competition of substitute forms of transportation—private automobiles, buses, trucks, pipelines, waterways, and the airplane—and from changes in the business character of the territory served, such as might arise from loss of natural resources or shifting of trade to other areas The indirect forms of competition have destroyed the "monopoly" position of the railroads in so far as the bulk of their traffic is concerned

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[1] The increasing competition of other carriers has taken away a measure of this indispensability, particularly in the case of short hauls. However, the railroads continue to carry the bulk of the freight tonnage of the country.

[2] See Chapter 10.

**Effect of commission control on profits.** In our study of public utility investments, it was found that commission control, where it is exercised in an enlightened manner, has a beneficial effect on the operating company Of course, such control may be burdensome, and, even though it is not the intention of the legislature or commission to assume an arbitrary position, the inability of commissions to recognize changing economic conditions as rapidly as necessary sometimes operates to the disadvantage of the regulated industry The commission is a quasi-judicial body and acts only upon consideration of proper evidence Accordingly, when operating costs advance rapidly, as they did during and after the first World War, it is impossible, in many instances, for the various utility and railroad commissions to act on applications for rate increases in sufficient time to relieve the regulated companies from all losses Nevertheless, where judiciously exercised, commission control is on the whole advantageous to investors in public service enterprises

**Development of control by Interstate Commerce Commission.** At first the railroads of this country were regulated largely by state legislatures or state commissions In 1887 the Interstate Commerce Commission was created for the purpose of regulating railroads engaged in interstate commerce The commission at that time was granted the power to determine reasonable maximum rates and to require accounting reports at such times and in such forms as it saw fit Discrimination and pooling were forbidden, and rates were required to be published The act, however, was not clearly worded in all sections, and a long series of legal battles was fought over disputed points The courts in many cases decided in favor of the railroads Additional legislation therefore became imperative

The first important amendment to the original act was known as the Elkins Amendment of 1903 This amendment dealt largely with the evils growing out of personal discrimination and rebates and did not greatly enlarge the powers of the commission The Hepburn Act of 1906, however, did increase substantially the commission's powers Of particular significance to us was the power given to the commission over rates at that time This act provided that whenever, after a complaint and a full hearing, the commission should be of the opinion that the rates of common carriers, or their regulations and practices affecting such rates, were unjust and unreasonable, it was empowered to prescribe the maximum rates and the regulations and practices thereafter to be observed Furthermore, the commission's orders (except for the payment of money) were to take effect within not less than thirty days and to continue in force for not more than two years, unless suspended or set aside by the commission or the courts The power of the commission over railroad accounts was likewise enlarged The act of 1887 was made effective for the first time The necessary mandatory provisions were applied by the Hepburn Act, which provided that the detailed annual reports to be rendered by the carriers must be made under oath and filed with the commission within three months after the close of the year to which they apply Furthermore, the commission might call not only for annual reports, but also for monthly reports of earnings and expenses, and for special reports The commission was even given the power to prescribe the forms of all accounts kept by the roads, and no other accounts might be kept than those prescribed or approved by it It had the further right of access at all times to accounts of the road and authority to employ special examiners for purposes of audit and inspection Severe penalties were prescribed for violations, particularly where false entries were willfully made

The next important revision in the powers of the commission was made in the Mann-Elkins Act of 1910 From our standpoint, the most significant change made at this time again pertained to control over rates This act provided that, whenever any new rate, fare, or classification was filed with the Interstate Commerce Commission, the commission should have authority, either on complaint or on its own initiative without complaint, to enter upon a hearing concerning the propriety of the proposed change The old rate or classification remained in force, pending the hearings and decision on the application, for a period of 120 days beyond the time when they would have gone into effect If the commission was unable to decide the case within 120 days, an extension of six months might be made Under the provisions of this act the entire burden of proof as to the reasonableness of the proposed rates rested on the railroad and not, as hitherto, on the commission

There were other important provisions in the Mann-Elkins Act, particularly those applying to the long- and short-haul problem, and to the institution of the short-lived Commerce Court It was the broad extension of the rate-making provisions, however, that had the most important effect on the investment status of railroad securities

The act of 1910 authorized the commission to suspend proposed changes in rates, and, if it found them unreasonable, to prevent them from going into effect This, however, required some sort of yardstick by which reasonableness could be measured In other words, the question of "fair value" for rate-making purposes was immediately raised In 1913, therefore, Congress passed the so-called Valuation Act, which directed the commission to ascertain the value of all the property owned or used by every common carrier subject to the provisions of the act More specifically, it was directed to ascertain and report in detail as to each piece of property used for common carrier purposes, the original cost to date, the cost-of-reproduction-new, and the cost-of-reproduction-less-depreciation, and to indicate the methods by which these costs were obtained Properties acquired by gifts were to be separately shown While the commission was empowered to prescribe the method of procedure to be followed in carrying out its investigations, and the form in which results were to be submitted, nevertheless it was required to show the value of the property of every carrier as a whole and to show separately the value of its property in every state and territory The work of valuation, begun in 1913, finally resulted in tentative or final valuations for the transportation property of the various railroads, but, for reasons which are discussed later, they have almost no present investment significance [8]

**Effect of Mann-Elkins Act on railroad rates and earnings.** The decade from 1910 to 1920 witnessed changes of a revolutionary nature in our economic structure The effects of the first World War, with its abnormal inflation in prices of commodities and wages, are familiar to all students of economics Had the situation as it existed in 1910 changed only gradually, it is probable that many years would have passed by before any marked change would have taken place in the attitude of the commission and of Congress toward the railroad problem During the first years that the Elkins Act was in effect, reasonable rates meant rates favorable to the shipper, and not to the railroads The commission consistently refused to assume any obligations to assist the carriers in earning a fair return on their property values and moved very reluctantly during this period in granting any increases in rates The relief that the roads might obtain from the courts was also delayed because of the length of time required to hear rate cases Moreover, the losses incurred through inadequate rates pending hearings were irretrievably lost so far as the roads were concerned In fact, from 1910 to 1920, railroad earnings were so seriously affected by advancing costs and adverse decisions in respect to applications for higher rates that new capital investments were discouraged

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[8] See pp 370, 424

Shortly after the passage of the Mann-Elkins Act of 1910, the railroads applied for increases in rates on the plea that higher operating costs were reducing their profits below reasonable levels [4] The story from this point on for the decade 1910–1919 was one of rate increases denied or inadequate to meet rapidly rising costs resulting from a rising price level [5] The attitude of the commission was such as to destroy confidence in railroad securities Total net operating income of all Class I railroads failed to show any important increase from 1912 to 1920, except for 1917, when substantial advances were granted to meet war conditions After 1917 earnings declined, reaching extremely low levels in 1920 Figure 14 illustrates the effect of low railroad rates and advancing costs on net railway operating income during that period

The commission's attitude during this difficult period was passive it did not consider itself under any obligation to assist the roads to earn an adequate return on their property values This fact, combined with the results of Government operation from January 1, 1918, to March 1, 1920, brought the state of railroad credit to an extremely low point The situation was so acute at the beginning of 1920 that substantial relief was necessary at once if the carriers were to secure the capital necessary to make such extensions as were absolutely required by the rapid expansion that had taken place in other industries from 1910 to 1920

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[4] The Mann-Elkins Act, it will be recalled gave the commission power to suspend the operation of new rates for a period of 120 days pending a hearing as to reasonableness If this was insufficient, an additional period of six months was allowed

[5] The record may be traced in the following cases two decisions denying increases in 1911, 20 *I C C Reports*, 243–306 (eastern case), and 307–399 (western case), inadequate increases in 1914, 31 *I C C Reports*, 351–454, and 32 *I C C Reports* 325–354, and similar tardy and insufficient advances in 1915 and 1917, 35 *I C C Reports*, 497–681, and 45 *I C C Reports*, 303–355, respectively

**Transportation Act of 1920 rate-making powers.** Relief was given through the passage of the Transportation Act of 1920, which marked a radical departure in the philosophy of government regulation of railroads Again, the most important provisions of the act pertain to the rate-making powers of the commission For the first time since 1887, the Interstate Commerce Commission was given complete power to establish rates for all carriers in respect to interstate commerce, but with the provision that "rates shall be adjusted from time to time so that the carriers as a whole, or as a whole in each rate group or territory, will, under honest, efficient, and economical management and reasonable maintenance expenditures, earn an annual net railway operating income, equal, as nearly as may be, to a fair return upon the aggregate value of the property of such carriers held for or used in the service of transportation " In order properly to carry out this provision, it was necessary for the commission to expedite its valuation work Pending the computation of final valuations for the various railroads, the commission was directed to make tentative valuations as a basis for rate-making During the first two years, beginning March 1, 1920, the commission was required to adopt 5 5 per cent as a fair return on the actual value of railroad properties, at its discretion, however, it might add a sum not to exceed a total of one half of one per cent for improvements, betterments, or equipment chargeable to capital account In May, 1922, the commission handed down a decision that "on and after March 1, 1922, a fair return upon the aggregate value of the railway property of the carriers as defined in section 15a of the Interstate Commerce Act, determined as therein provided, will be 5 75 per cent of such aggregate property value as a uniform percentage for all rate groups or territories designated by this commission "

Liberal as the act of 1920 was in the light of the past treatment that the roads had been accorded, it hardly erred in granting the roads too much It can scarcely be said that a 5 5 or 5 75 per cent return is excessive, particularly when one recalls that often public utilities were allowed to earn between 7 and 8 per cent

Because much railroad business is between terminals and important business centers, and consequently inter-railroad competition exists, rates must be made for the roads as a group in a given territory This system of rate-making explains why the act called for a fair return on the *aggregate value of railroad property in the rate territory,* rather than on the property of the individual company, as in the case of the utilities

Under such an arrangement, fortunately situated or exceptionally well-managed railroads could earn considerably in excess of the established fair return. To counterbalance this advantage, the act provided that if the net railway operating income of a road in any year were in excess of 6 per cent of the value of the property, it should be utilized as follows: (1) one half of such excess shall be placed in a reserve fund maintained by the railroad, and (2) the remaining one half shall go into a general railway contingent fund, to be controlled by the Federal Government and used for loans to needy roads unable to finance through ordinary channels. This clause, known as the recapture clause, was contested in the courts and upheld by the Supreme Court, January 7, 1924.[6] Because of unsettled disputes over the valuation base, only negligible amounts were collected under the recapture clause, and these were returned when Section 15a of the Transportation Act of 1920,

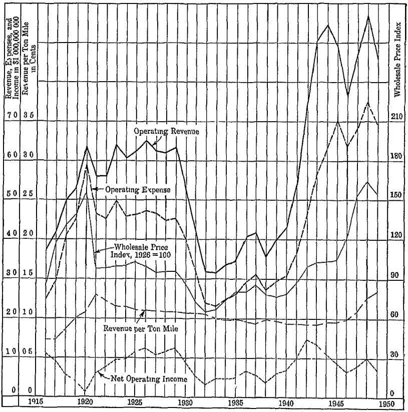

**Figure 14 Long-term Revenue and Expense Comparison of Class I Railroads**

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[6] Dayton Goose Creek Ry. Co. v. United States, 263 U. S. 456.

which laid down the principle of fair return and recapture, was repealed by the Emergency Act of 1933 Paragraph two of this amendment provides

> In the exercise of its power to prescribe just and reasonable rates, the Commission shall give due consideration, among other factors, to the effect of rates on the movement of traffic, to the need, in the public interest, of adequate and efficient railway transportation service at the lowest cost consistent with the furnishing of such service, and to the need of revenues sufficient to enable the carriers, under honest, economical, and efficient management, to provide such service

Such a vague provision naturally leaves the problem of administration unsolved when, and if, railroad traffic and operating conditions make it possible for the industry to earn a reasonable rate on invested capital During World War II, a staggering volume of traffic permitted the railroads to come into their own Because they had previously fallen so far short of a normal return, the excess profits tax permitted them to keep sufficient of their war earnings to make an excellent showing compared to the record of the preceding decade (See Figure 14 ) Thereafter, the struggle to earn a fair return again became a problem Postwar inflation pushed up operating costs faster than rates Still worse was the resumption of competition of other forms of transport that made it doubtful that rates could be raised high enough without speeding up the diversion of traffic by amounts that would more than offset the higher rates Truckers, waterways, pipelines, and air transport were all seeking more business The railroads, on the other hand, because of heavy fixed costs, depend upon the maintenance of volume to achieve their low costs

**Railroad consolidations.** Another interesting phase of the attitude of the government in respect to the private operation of railroads pertains to consolidations The Transportation Act of 1920 contemplated the ultimate consolidation of all the railroads of the United States into a limited number of competing systems, and, under one of the provisions of the act, the Interstate Commerce Commission was directed to prepare a plan for this purpose In the original act the provision was not compulsory, although since 1920 efforts have been made to compel action on the part of the roads toward consolidation The first step taken by the commission under the 1920 act was to engage Professor W Z Ripley, of Harvard University, to formulate a plan of consolidation This plan was put forward in 1921 as a basis for discussion [7] Hearings on this plan were held in 1922 and 1923, and the case was submitted in 1924 The matter was held under consideration for several years, and in December, 1929, the commission announced a final plan of consolidation This plan provided for the consolidation of all railroad properties in the United States into 21 major systems, distributed as follows two New England systems, five trunk-line systems between New York, Philadelphia, and Baltimore on the Atlantic seaboard, and Chicago, St Louis, and Kansas City on the west, nine systems in the West, three in the South, and two composed of the Canadian-controlled lines in the United States[8] The two New England systems would be built around the New Haven and the Boston & Maine The Atlantic Coast Line, the Illinois Central, and the Southern would operate in the South The nine Western systems would be built around the Chicago & North Western, the Great Northern-Northern Pacific, the Union Pacific, the Chicago, Burlington & Quincy, the Atchison, Topeka & Santa Fe, the Missouri Pacific, the Chicago, Milwaukee, St Paul & Pacific, the Southern Pacific, and the Chicago, Rock Island & Pacific-St Louis-San Francisco combination Under this plan the five trunk lines would be the New York Central, the Baltimore & Ohio, the Chesapeake & Ohio-Nickel Plate, the Pennsylvania, and the Wabash-Seaboard However, there has been considerable discussion of a four-system plan to take the place of this five-trunk-lines system Minor modifications were made in 1932, among them was the assignment of the Wabash to the Pennsylvania system The Seaboard Air Line was left unassigned

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[7] An outline of this plan will be found in the *Commercial and Financial Chronicle*, Vol 113, pp 1429–1431, 1950–1952

This approach of the Government to rail consolidations had a certain logic The idea was not merely one of seeking possible economies from consolidation The purpose was to create a smaller number of systems of more equal strength, an objective that could not be reached directly by different rates to different roads because of the point previously made that for competitive reasons the roads in a given area have to charge similar rates[9] This solution, it was hoped, would combine the weaker roads into financially strong systems The country needs them to provide the necessary transportation service

A central purpose of the abandoned recapture provision mentioned above was to give a strong road earning more than the stipulated return an incentive to acquire the weaker ones The addition of the property of the weak road to the strong road's invested capital would give it a larger base figure upon which it earned a fair return without its being subject to recapture

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[8] For a detailed grouping of roads under this plan see *Moody's Manual of Investments Railroad Securities* (New York Moody's Investors Service, 1931), pp I-lxii For modifications made in 1932 see *ibid*, 1933, pp a53, ff The original plans appear in *I C C Reports*, Vol 159, p 522, and Vol 185, p 403

[9] The similar problem in the field of air transport has been met by differential subsidies in the form of different rates for mail transport The danger in such a solution is the encouragement to inefficiency

While the Interstate Commerce Commission cannot compel consolidation, it can exercise a veto power on any proposed plans that are not in accordance with the spirit of the act Relatively few consolidations have been effected since 1920 The whole movement seems to have lost much of its former glamour Some are inclined to regard consolidation as having but minor importance in solving the problems of the industry Remarkable improvement in efficiency and financial strength has been achieved in recent years by some of the smaller and weaker roads through the efforts of able management On the other hand, in the period since the passage of the 1920 Act some of the largest and strongest roads have lost not only relative position but have developed signs of financial weakness While consolidation has virtues in some cases, the record suggests that beyond a certain point it is no panacea but may create managerial problems that increase with size and that a degree of competition is socially useful in providing intercompany comparisons of performance and stimulating progress in the art of railroading

**Security issues, changes in physical assets, and accounting.** Of particular interest to the investor is the exclusive control that is given the commission in respect to the issuance of all railroad securities, except notes maturing in less than two years, when the total issues of such notes amount to less than 5 per cent of the road's total capitalization The commission likewise has jurisdiction over all important extensions or abandonments of present property, as well as over all matters of accounting The extent of the commission's power over the accounting of the railroads has already been discussed in connection with the Hepburn Act

The reason for such control is much the same as in the case of public utility companies Since the commission is charged with the duty of seeing that a fair return is allowed on the value of railroad property used in the public interest, it incurs a certain moral obligation toward the investor in railroad securities Although the commission is in no way legally responsible for the return shown on any investment in the hands of the public, the mere fact that it is expected to permit rates that will yield an adequate return on property values places at least a presumptive burden on it in respect to the soundness of the securities issued by the railroad to acquire new property If it appears that the property to be acquired cannot reasonably be expected to earn an adequate return under reasonable rates, because of anticipated traffic conditions, or if the new financing will result in too heavy charges, then the commission should be given the right to pass on such matters in advance, thus protecting to some extent the investor, as well as those who might later be required to pay the cost of unproductive financing through higher rates Finally, control of accounting matters is necessary if earnings are to be properly determined

**Railroad valuation.** It has been noted that, as early as 1913, Congress passed the so-called Valuation Act, by which the Interstate Commerce Commission was directed to ascertain the value of all the property owned or used by every common carrier subject to the provisions of the act It is unnecessary to go into the various theories of valuation at this point, since the problem does not differ substantially from that presented for utilities[10] In the Valuation Act no specific basis for valuation was adopted, but the commission was directed to ascertain and report in detail as to each piece of property used for common carrier purposes, the original cost to date, the cost-of-reproduction-new, and the cost-of-reproduction-less-depreciation It was also required to indicate the methods by which these costs were obtained, and to report separately all other values and elements of value, if any, and the methods of valuation employed

In 1920 the commission adopted a tentative valuation of $18,900,000,000, as of December 31, 1919, in connection with a rate decision[11] This sum exceeded the outstanding capitalization of $16,550,310,683 at that date but fell short of the total cost of road and equipment as shown on the books at $20,040,572,611 As of January 1, 1948, the Interstate Commerce Commission valuation for all Class I railways, including both lessor and proprietory companies, totalled $26,495,297,456 for their fixed operating properties before allowing for depreciation and excluding the investment in working capital[12] This total may be compared with the book figure of $27,306,378,000, which was 3 per cent higher Recorded depreciation and amortization amounted to $6 billion The gross amounts are substantially less than would be required to reproduce the properties at the higher price level prevailing in recent years If the Commission figures were introduced on the books of the railroads, the reduction would be relatively small, the resulting assets would greatly exceed the amount of securities outstanding, and the chief change would be a moderate reduction in balance sheet surplus With the passage of time, more and more of the assets consist of items purchased and recorded under the accounting rules of the commission Consequently, the tendency is for the recorded figures to continue to approach the current accounting standard of "original cost"

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[10] See Chapter 10

[11] *I C C Reports*, Vol 58, pp 220, ff

[12] Ex Parte No 168, Increased Freight Rates, 1948 276 I C C 9 Of the $26,495,297,456 total, $24,564,552,260 represented original cost except land and rights and $1,930,745,196 the valuation of land and rights Investment in working capital including material and supplies was placed at $703,212,600

**Effects of Government control on security values.** The effects of Government control from the point of view of the investor cannot be summarized easily Public and uniform accounting reports have been invaluable in enabling security holders to judge values Control over security issues has limited the profits of investment bankers and tended to make for more conservative capital structures, that is, a reduction of debt where possible In the all-important matter of rate regulation, the Commission's emphasis has been placed more largely on protection of the shipper than on producing a fair return for the investor In all fairness to the Commission, the difficulties of increasing rates to achieve that objective should be recognized The large increase in the volume of traffic moved by other carriers since 1920 has served as a warning in this regard Nevertheless, the Commission is laggard to raise rates when rising prices increase operating costs even when the veriest tyro can detect the need in current operating figures Earnings lost through such tardiness cannot be regained later Similarly, the Commission is slow to permit the abandonment of branch lines that are highly unprofitable

There is always an insistent demand on the part of shippers for lower rates The demands of farmer shippers have been particularly pressing Their own plight between 1920 and 1940 made them most active and their political weight has made their hostility extremely important More recently, industrial and agricultural interests in the Southern states have attacked rates in their region as excessive and as thus preventing their shipping products into the rich Northern markets on a parity with producers located in other territory None of these critics of railroad rates is concerned, as a rule, with the costs of transportation, and all ignore the need for rates adequate to provide the means to insure continued efficient service

The pressure of competition from substitute forms of transportation sets an upper limit to the freight tariffs that can be charged regardless of costs The railroads have even requested rate reductions in order to retain or to get back traffic The question they face is whether or not they can hold a sufficient volume of business to enable them to earn a reasonable return on investment at rates that are often set by competition rather than regulation

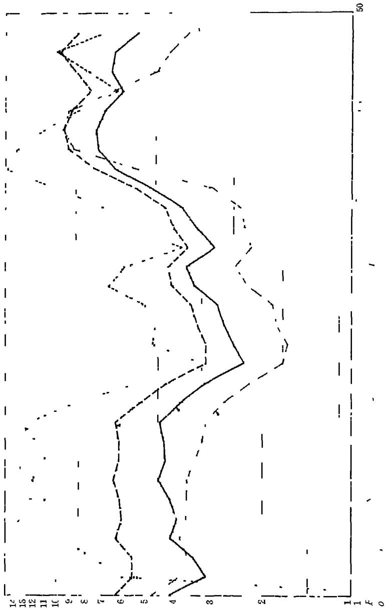

Figure 15 Revenue Traffic and Gross and Net Revenues of Class I Railroads (1920–1949)

The Motor Carrier Act of 1935 was passed with the intention of equalizing the competitive position of railroads by bringing motor carriers engaged in interstate commerce under the authority of the Interstate Commerce Commission Whether or not any satisfactory scheme of rate regulation can be devised for such a highly competitive group of carriers, which have extremely varied costs of operation and which serve such a multitude of special situations, remains to be seen

The Transportation Act of 1940 brought almost all carriers, except air carriers, under the common jurisdiction of the Interstate Commerce Commission so as to provide more equal regulatory treatment Other provisions designed to be helpful to the railroads were included in this act The initiative for undertaking consolidation plans was returned to the railroads, certain low rates on Government freight provided for under old land grant statutes were eliminated, and the Reconstruction Finance Corporation was given permission to lend to railroads in order that they might purchase their own bonds on favorable occasions, to reduce fixed charges Probably these measures are valuable chiefly as they represent a more favorable attitude toward the railroads and an appreciation of the need to preserve this basic transportation service The fundamental problems of the industry will receive further attention as we proceed

**Fluctuations in railroad earnings and business conditions.** A panoramic view of the combined effect of regulation, external competition and business fluctuations can be seen in Figure 15 and the accompanying table where traffic volume and income are portrayed for the period 1920–1949 Here are shown the prosperous 1920's, the depressed 1930's, the period of World War II, and the first years of postwar prosperity The detailed influence of changing rates, wage scales, and taxes will not be discussed here[18] The ratio scale is employed in the chart to permit a study of relative fluctuation (A given vertical distance always represents the same relative fluctuation To determine absolute changes, the scale must be studied )

Freight traffic, which is the backbone of railroad operations, showed a continuation of historical growth at a reduced rate during the 1920's (Ton-miles represent the number of tons carried one mile ) Gross operating revenues, which are the sums paid

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[18] An excellent résumé of rate changes, legislation, wage changes, consolidations, and similar matters of investment interest will be found in the supplementary material published each year in *Moody's Manual of Investments Railroad Securities* (New York Moody's Investors Service), and the annual *Review of Railway Operations*, published by the Bureau of Railway Economics, Washington, D C

REVENUE TRAFFIC AND GROSS AND NET REVENUES OF CLASS I RAILROADS*

(000,000 Omitted)

| Year | *Ton Miles* | *Passenger Miles* | *Gross Oper Revenues* | *Net Railway Oper Income* |
|---|---|---|---|---|
| 1920 | 410,306 | 46,849 | $6,178 | $ 17 |
| 1921 | 306,840 | 37,957 | 5,517 | 601 |
| 1922 | 339,258 | 35,470 | 5,559 | 760 |
| 1923 | 412,727 | 37,957 | 6,290 | 962 |
| 1924 | 388,415 | 36,091 | 5,921 | 974 |
| 1925 | 413,814 | 35,950 | 6,123 | 1,121 |
| 1926 | 443,746 | 35,477 | 6,383 | 1,213 |
| 1927 | 428,737 | 33,650 | 6,136 | 1,068 |
| 1928 | 432,915 | 31,601 | 6,112 | 1,173 |
| 1929 | 447,322 | 31,074 | 6,280 | 1,252 |
| 1930 | 383,450 | 26,815 | 5,281 | 869 |
| 1931 | 309,225 | 21,894 | 4,188 | 526 |
| 1932 | 233,977 | 16,971 | 3,127 | 326 |
| 1933 | 249,223 | 16,341 | 3,095 | 474 |
| 1934 | 269,006 | 18,036 | 3,271 | 462 |
| 1935 | 365,913 | 18,476 | 3,452 | 500 |
| 1936 | 339,246 | 22,421 | 4,053 | 667 |
| 1937 | 360,620 | 24,655 | 4,166 | 590 |
| 1938 | 290,084 | 21,629 | 3,565 | 373 |
| 1939 | 333,438 | 22,651 | 3,995 | 589 |
| 1940 | 373,253 | 23,762 | 4,297 | 682 |
| 1941 | 475,072 | 29,350 | 5,347 | 998 |
| 1942 | 637,984 | 53,659 | 7,466 | 1,485 |
| 1943 | 727,075 | 87,820 | 9,055 | 1,360 |
| 1944 | 737,246 | 95,549 | 9,437 | 1,106 |
| 1945 | 681,001 | 91,717 | 8,902 | 852 |
| 1946 | 591,982 | 64,673 | 7,628 | 620 |
| 1947 | 654,728 | 45,921 | 8,685 | 781 |
| 1948 | 637,917 | 41,179 | 9,672 | 1,002 |
| 1949 | 526,500 | 35,095 | 8,580 | 686 |

* Compiled from Interstate Commerce Commission, *Statistics of Railways in the United States.*

for railroad service by the customers, flattened out, however, and showed no trend in the years 1923–1929 The rise of truck competition following World War I had begun the squeeze on rates and the diversion of high-rate, short-haul traffic The narrowing spread between gross revenues and freight traffic during the 1930's reflected the continuance of this process Only after 1945 did revenues gain as the result of price inflation, which made rate increases necessary The huge contribution of the railroads to the war effort is seen in the extraordinary volume of both freight and passengers moved Long hauls to the seaboard of materiel and personnel destined for a global combat contributed heavily to the total ton- and passenger-miles of service. Most encouraging to those appreciative of the industrial and military importance of the railroads was the maintenance of traffic in the ensuing peace years at levels above those in the 1920's. Even passenger traffic, which suffered greatly from the rise of the private automobile in the 1920's, succeeded in holding some of its war gains although the trend was most unfavorable after the war ended.

The ratio scale brings out the greater relative fluctuations of the net railway operating income as compared with the gross operating revenues. Although they ordinarily fluctuate in the same direction, occasional movements, as in 1920–1921, are to be found. Price deflation with a lowering of costs and tardy rate increases made it possible for the railroads to convert an almost zero net operating income in 1920 to a more substantial figure from a smaller volume of traffic revenues in 1921. During the war years, 1941–1945, net operating income failed to rise as much as would have been expected from the rise in revenues because of heavy excess profit taxes. Following a longstanding practice of railroad accounting, originated when income taxes were not a consideration, the net figure is stated *after* taxes including those based on income. Total taxes rose from $356 million in 1939 to a peak of $1,849 million in 1943, and fell again to $498 million in 1946 the first postwar year, when carry-forward credits permitted a temporary retrieval of some of the heavy war taxes.

While traffic volume of railroads fluctuates with general business conditions, they serve as the arteries of commerce and so function in good times and bad. Even in the very depressed years of the 1930's they showed considerable net earnings, although, it is true, the total was insufficient to pay the substantial fixed charges in some years. While particular roads have suffered from the competition of water transport and pipelines, the chief threat has appeared in the auto, bus, and truck in respect to passenger and short-haul freight business, respectively. Figure 15 (page 375) shows that during the 1920's the effect of this rapidly expanding competition was to flatten out the growth curve for revenues rather than to cause an actual recession.

The loss of passenger traffic has been clear-cut and may be permanent. In view of the doubtful profitability of this branch of the business and its lesser importance, this loss should not be overstressed. The backbone of traffic and earning power is in the freight division. The trucking industry has tended to get the high rate, consumers' goods, short-haul business so that freight traffic and revenues will tend to be more dependent upon heavy industry and more fluctuating than formerly. This and allied matters will be considered more fully in the next chapter.

One further point, brought out by Figure 14, is the correlation between wholesale price movements and railroad operating expenses. Since regulation makes rates slow to respond to changing economic conditions, it is to be expected that the railroads will suffer from a rising commodity price level and tend to gain from declining prices, provided the latter do not cause a severe falling off in general business. Thus, in the years immediately after 1920, earnings improved when falling prices lowered operating expenses. In the years following 1929, the declines in traffic volume were too great to be offset by the lowering operating expenses that followed falling prices. Advancing prices and labor costs are disadvantageous in that rates may not be expected to increase as rapidly as prices, owing to the existence of commission control. This situation was clearly illustrated during the 1916–1920 inflation of prices. Even in 1934, the rise in prices boosted railroad operating costs to such a degree that improving traffic and revenues failed to increase the net earnings. The inflation influence appeared again after 1945. It is accordingly desirable for the investor to keep in close touch with price trends, especially in respect to coal, steel, and wages. The changing balance between operating revenues and expenses can be traced in the following table (Class I railroads are those with annual gross operating revenues in excess of $1,000,000).[14]

OPERATING RATIOS OF CLASS I RAILROADS

1912–1949

| *Period* | *Average* | *High* | *Low* |
|---|---|---|---|
| 1912–1916 | 69.9 | — | — |
| 1917–1919 | 79.2 | 85.5 (1919) | 70.5 (1917) |
| 1920–1929 | 77.6 | 94.3 (1920) | 71.8 (1929) |
| 1930–1939 | 74.7 | 72.3 (1936) | 77.0 (1931) |
| 1940–1945 | 68.4 | 79.2 (1945) | 61.6 (1942) |
| 1946 | 83.4 | | |
| 1947 | 78.3 | | |
| 1948 | 77.3 | | |
| 1949 | 80.3 | | |

**Capitalization.** To complete a broad picture of the railroads, we turn next to the invested capital devoted to the industry by the major companies. Capital structure figures show the changing book investment of the bond and stockholders.

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[14] Compiled from *Statistics of Railways in the United States*, Interstate Commerce Commission, and *Review of Railway Operations in 1949*, Bureau of Railway Economics.

COMBINED CAPITAL STRUCTURE OF CLASS I RAILROADS IN THE UNITED STATES*

| | *Amounts (Millions of Dollars)* | | | | *Proportions (Percentages)* | | | |
|---|---|---|---|---|---|---|---|---|
| | *1920* | *1930* | *1940* | *1947* | *1920* | *1930* | *1940* | *1947* |
| Bonds | 9,705 | 10,795 | 10,778 | 8,335 | 48.8 | 45.4 | 50.2 | 38.9 |
| Preferred stock | 1,658 | 1,906 | 1,880 | 1,852 | 8.3 | 8.0 | 8.8 | 8.6 |
| Common stock | 5,552 | 6,362 | 6,279 | 6,040 | 27.9 | 26.7 | 29.3 | 28.2 |
| Surplus | 2,983 | 4,730 | 2,515 | 5,200 | 15.0 | 19.9 | 11.7 | 24.3 |
| Total | 19,898 | 23,793 | 21,452 | 21,427 | 100.0 | 100.0 | 100.0 | 100.0 |

* Compiled from Interstate Commerce Commission, *Statistics of Railways in the United States*

Growing investment during the 1920's is shown by these figures. Some observers comparing only the stocks and bonds have stressed the high proportion of bonds. If surplus were ignored, the percentage of bonds to total capitalization fell slightly from 57.4 to 56.6 per cent between 1920 and 1930. The proportion was high but not unusual by the standards of the period. The wide use of bonds was explainable for many roads by their inability to sell other securities in such years as 1920 to 1925, and by the very low rate of interest at which borrowed funds could be obtained. The most rapid increases in funded debt occurred in the years 1923 and 1924, those in stock, in 1927 and 1928. These figures are sometimes cited by those who believe the railroads were recklessly overbonded in this period. When retained earnings are included, however, it is apparent that the chief source of funds during this decade was from that source. Surplus supplied about one half of the needed funds, bonds, only one fourth. Individual roads showed unfavorably high debt burdens, but the general plight of the railroad industry during the 1930's must be attributed to the extraordinary and prolonged depression of earnings, rather than to an unduly high ratio of debt to stockholders' investment. The debt ratio had been reduced from 49 to 45 per cent during the 1920's.

During the depressed 1930's, debt remained almost unchanged in total. Approximately a third of the industry was in bankruptcy. When the war lifted earnings after 1940, railroads retained the major part of their stockholders' earnings to reduce debt and restore credit. This policy explains the large decrease in debt during the 1940's, almost $2.5 billion, while surplus was growing by $2.7 billions. Another factor in debt reduction was the completion in these same years of the reorganization of the roads that had gotten into trouble in 1930. Even after the war ended, the policy of retaining more than half of net income was continued not only to reduce debt but also to buy new equipment and to make capital additions and betterments Aside from debt in the form of equipment obligations, retained earnings was almost the sole source of funds for rehabilitation and improvements

**Data available in respect to railway operations.** Further information for both the operations of individual roads and the industry as a whole is easily available to the investor in railroad securities The most important official sources of information are the various reports issued by the Interstate Commerce Commission The Interstate Commerce Commission's annual reports and its annual *Statistics of Railways in the United States,* which contains a wealth of financial and statistical data both for individual roads and for all roads combined, are extremely valuable Before this latter volume is published, preliminary partial reports are available on (1) operating revenues and operating expenses by class of service, (2) comparative operating averages, and (3) freight commodity statistics of the Class I steam railways There is also a regular quarterly publication presenting freight commodity statistics Monthly publications deal with the following (1) operating revenues and operating expenses, (2) selected income and balance sheet items, which are particularly useful in checking up on current liabilities and funded debt maturing within six months, (3) operating statistics for the larger railroads (annual operating revenues over $25,000,000), (4) freight and passenger service operating statistics, (5) fuel and wage statistics, and (6) a graphical supplement

The Bureau of Railway Economics of the Association of American Railroads also releases a monthly publication called *Railway Revenues and Expenses* This publication furnishes data for the month, for the period from January 1 to the end of the month reported, and for the corresponding periods of the previous year on the following operating revenues and expenses, net operating revenue, operating income, net railway operating income, operating ratio, and the average mileage operated for all Class I Railways The amounts of such items for the preceding year and the percentages by which current figures exceed or fall short of figures for the previous year are also shown Freight revenue, passenger revenue, total operating revenues, total operating expenses, net railway operating income, and average miles of road operated, for the period from January 1 until the end of the month reported and for the corresponding period of the previous year, are shown for districts, regions, and individual roads

The bureau also publishes a special series of bulletins in which the annual *Review of Railway Operations* is a regular feature It contains a discussion of the important developments occurring during the year, as well as operating and financial statistics This series also includes special studies prepared at irregular intervals on topics of vital interest

The investor must also consider the annual reports compiled by the separate railroad companies themselves These reports present complete and accurate information regarding the operations of each road during the preceding year, and, unlike the financial reports of industrial and public utility companies, they are pleasingly uniform Every item is similarly handled, and the final form in which the income account and balance sheet of one road are set up is the same as that used by all other roads The reason for this lies in the fact that the Interstate Commerce Commission has complete jurisdiction over all accounting matters and prescribes the accounting procedure to be followed by all roads doing an interstate business[16]

**Territorial survey of important railway systems** Early railroad history in this country was characterized by the growth of innumerable small lines Gradually, however, well-defined systems came into being, which absorbed many of the smaller independent companies The culmination of this movement is found in the great consolidations that took place during the period from 1890 to 1907 Even though the railroad network was simplified by this movement, at least so far as ownership is concerned, it is still too vast and composed of too many parts to be readily comprehended as a whole In 1949 over 227,000 miles of road were operated in this country, while the Interstate Commerce Commission listed 133 Class I railroads alone—that is, roads with annual gross revenues in excess of $1,000,000 They represent 95 per cent of the total recorded railway investment and report 97 per cent of total operating revenues The difficulty of sketching a simple picture of this complex structure is apparent

**Freight classification territories** The most general and frequent grouping of railroads, territorially, is into three sections one section, the eastern district, comprising that portion of the country north of the Ohio and Potomac Rivers and east of the Great Lakes and a line drawn from Chicago through Peoria to East St Louis and thence down the Mississippi River to the mouth of the Ohio River, another, the southern district, south of the Ohio and Potomac and east of the Mississippi, and a third, the western district, the region west of the first two This is the geographical division adopted for freight classification purposes

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[16] See pp 400, 414, for specimens of such reports

**Geographical grouping of railroad systems.** A more detailed geographical division of railroads is into the following groups roads operating in trunk line territory, covering the Central Eastern and Great Lakes regions, the New England roads, the anthracite coal roads, which are a group of shorter roads within the trunk-line territory, the soft, or bituminous, coal roads, located in what is known as the Pocahontas region, the Southern roads, which are south of the Ohio and Potomac Rivers and east of the Mississippi, the Southwestern roads, which run south and west from Chicago and St Louis but end east of the Rockies, the Central Western, and the Northwestern roads, including the 'Grangers" In order to give the student a bird's-eye view of the present railroad map, the more important roads operating in each of these territories are briefly described

**Trunk-line roads** Both historically and from the standpoint of amount of traffic hauled, so-called trunk-line territory is the most important railroad area in this country This area may be described as a belt of territory extending from New York and Baltimore on the eastern seaboard to Chicago and St Louis in the West The New York Central and the Pennsylvania are the best-known roads operating in this area The New York Central extends from tidewater at Boston and New York City to Cincinnati, Chicago, and St Louis This road has two routes from Buffalo to Chicago—one by the Michigan Central through Detroit, and the other by the Lake Shore through Cleveland and Toledo The Pennsylvania reaches tidewater at New York, Norfolk, and Baltimore, and extends to Cincinnati, Louisville, St Louis, and Chicago in the West, covering, of course, the intermediate territory

The Baltimore & Ohio likewise operates in trunk-line territory, extending from Philadelphia via Baltimore, where it reaches tidewater, and Washington to Cumberland, Maryland Thence it extends to Chicago via Pittsburgh and to St Louis via Cincinnati

The Erie is one of the major trunk-line carriers from New York to Chicago While this road reaches the intermediate centers of Cleveland, Cincinnati, and Buffalo, as well as Scranton and Wilkes-Barre, it does not reach directly other large industrial centers in the region, such as Pittsburgh and St Louis Consequently it operates at a disadvantage in comparison with some of the other trunk lines

The Chesapeake & Ohio, a Pocahontas road, extends into trunk-line territory and runs from Chicago to Newport News, Virginia

Branches reach Columbus, Louisville, and Washington Cincinnati, Richmond, and other important cities are also served Through its merger with Pere Marquette it extends into Michigan and serves Detroit

Both passenger and freight traffic density is higher, on the whole, in trunk-line territory than in any other section of the country Food and raw materials are carried eastward, while manufactured goods are carried to the west It is over roads that operate in this territory that the most vital commerce of the country is transported

**New England lines.** To the northeast of trunk line territory and along the eastern seaboard are situated the New England States Southern New England, comprising southern Massachusetts, Rhode Island, and Connecticut, is essentially different from northern New England, in that it is densely populated and highly industrialized Except for the Boston & Albany (New York Central line), the only railroad system in this territory is the New York, New Haven & Hartford This road enjoys a very heavy passenger and freight traffic Its freight traffic consists of incoming raw materials, coal, and foodstuffs, and outgoing products of New England factories Operations of this road are characterized by short-haul traffic and diversity in freight Northern New England is served by the Boston & Maine, which is closely connected with the New York, New Haven & Hartford, the Central Vermont, the Maine Central, and the Bangor & Aroostook

**Southern territory** The principal systems serving the area east of the Mississippi and south of trunk-line territory are the Atlantic Coast Line, the Seaboard Air Line, and the Southern The Atlantic Coast Line connects with Washington, D C, Richmond and Norfolk, Virginia, in the North, and extends along the eastern seaboard to Charleston, Savannah, and Jacksonville on the eastern seacoast From there it crosses the peninsula to Tampa. This road also controls the Louisville & Nashville, which spreads from Cincinnati to the Gulf at Pensacola Divisions also reach St Louis, Memphis, and New Orleans The Seaboard Air Line traverses nearly the same territory as the Atlantic Coast Line proper Its northern terminals are at Richmond and Norfolk, although it connects with Washington, over the Richmond, Fredericksburg & Potomac, and reaches south as far as Miami and Florida City[16] It also has terminals at Tampa on the west coast and extends inland to Birmingham and Montgomery in Alabama The Southern Railway lies further inland than the other two roads in this territory The Southern, as its slogan goes, "Serves the South," which is what is ordinarily designated as "southern" territory as described above Every state in this area except West Virginia is traversed by the company's lines, which also reach out across Indiana and Illinois to the Mississippi River at St Louis The Southern Railway has northern gateways at Washington and Cincinnati, western gateways at St Louis and Memphis, and reaches tidewater at the ports of Norfolk, Charleston, Savannah, Brunswick, and Jacksonville on the Atlantic, and Mobile and New Orleans on the Gulf of Mexico It thus serves nearly every important community in the South

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[16] The stock of the Richmond, Fredericksburg & Potomac Railroad is controlled by the Richmond Washington Company, which, in turn, is owned equally by the Pennsylvania, Baltimore & Ohio, Atlantic Coast Line, Southern Railway, Chesapeake & Ohio, and Seaboard Air Line

Traffic of the lines operating in southern territory flows for the most part north and south The principal products are manufactured goods and foodstuffs, which come from the Central and the North Atlantic States and from the North Central States Northbound traffic consists of raw cotton, lumber, and some mineral products

The Illinois Central runs down the Mississippi Valley from Chicago to New Orleans but reaches the Union Pacific at Sioux City It has principal connections at some 31 major junction points with major roads running east and west, including some on branches to Council Bluffs (Union Pacific), East St Louis, Indianapolis, Louisville, Shreveport, and Birmingham Savannah, Jacksonville, and Montgomery are reached through the Central of Georgia

**Anthracite coal roads.** The roads that carry the bulk of the country's anthracite coal north are the Delaware, Lackawanna & Western, the Reading, the Lehigh Valley, the New York, Ontario & Western, and the Delaware & Hudson Although these roads run through highly industrialized territory and carry commodities other than anthracite, the latter constitutes such a large portion of their total freight that it is the descriptive name by which they are commonly known

**Bituminous coal roads.** Roads whose traffic is made up largely of bituminous coal mined in the Pocahontas region are the Chesapeake & Ohio, already described, the Norfolk & Western, and the Virginian

**Southwestern roads** The group of roads that radiate from Chicago and St Louis to the South and the Southwest but that do not go to the Pacific Coast is known as the "southwestern" roads The

St. Louis-San Francisco Railway extends from Kansas City and St Louis southwesterly through Missouri, Kansas, Oklahoma, and Arkansas into Texas, with a line from Kansas City crossing the Mississippi River at Memphis and extending southeastwardly to Birmingham Another line extends from St Louis, through the Mississippi Valley to Memphis, and thence to Birmingham, where it connects with the lines to the Atlantic and the Gulf, making it the shortest route from St Louis to tidewater Other lines extend from St Louis into the grain section of Kansas, as well as into Oklahoma and Texas Its lines form the shortest routes between Kansas City and Memphis, Memphis and Birmingham, St Louis and Memphis, St Louis and Tulsa and Oklahoma City, and St. Louis and Fort Worth and Dallas

There are five other roads that operate in the southwestern area, and do not extend to the Pacific Coast The most important of these, the Chicago, Rock Island & Pacific, extends from Chicago to St Paul, to Denver, to Santa Rosa, New Mexico (where it connects with the Southern Pacific to form a through route to the Coast), and to Dallas, Texas It also extends southerly into Louisiana and southeasterly to Memphis The Missouri Pacific extends from St Louis and Kansas City to New Orleans, Galveston, and El Paso Another branch extends from Kansas City to Omaha, while at Pueblo, Colorado, a junction is made with the Denver & Rio Grande Western by means of which the Rocky Mountain Region is covered

The other three roads are the Kansas City Southern, which extends from Kansas City to Port Arthur on the Gulf, the Missouri, Kansas & Texas, which extends from Kansas City and St Louis to Galveston and San Antonio, Texas, and the St Louis Southwestern, which runs from St Louis to Fort Worth and Comanche, Texas

**Central Western roads.** Next to be considered are those roads that operate in southwestern territory and that reach the Pacific Coast either directly or by means of affiliated lines Of these roads the Atchison, Topeka & Santa Fe is pre-eminent This road extends from Chicago to Kansas City and St Joseph, Missouri At this point the various lines diverge in a wide network covering the states of Kansas, Oklahoma, and New Mexico The main line extends to Barstow, California, at which point it separates into two lines, one extending to Los Angeles and the other to San Francisco From Los Angeles a line runs south to San Diego, California A line also extends from Wichita, Kansas, to the Gulf at

Galveston, with branches extending to the east and west through Texas Another line extends to Denver on the north

The eastern terminal of the Southern Pacific is at New Orleans, whence it extends westward across Texas to El Paso, and thence along the Mexican border to the Coast, where it has terminals at San Diego, Los Angeles, San Francisco, and Portland This road is the dominating factor in northbound and southbound traffic on the Coast A line also extends from San Francisco to Ogden, Utah, where connection with the Union Pacific is made for a through route to Chicago The connection with the Rock Island at Santa Rosa has previously been mentioned

The Union Pacific starts from Omaha and Kansas City, and runs to Denver, Salt Lake City, Ogden, Spokane, Portland, Tacoma, and Seattle It also has a line extending from Salt Lake City to Los Angeles At Ogden connection is made with the Southern Pacific for San Francisco At Omaha it connects with the Chicago & North Western for Chicago

**Northwestern roads** Those roads that extend from Chicago into the agricultural territory west of Chicago, but which do not reach the Coast, are known as the Grangers The more important of these are the Chicago & North Western, and the Chicago, Burlington & Quincy The former extends from Chicago through Iowa, Nebraska, Wisconsin, Minnesota, and South Dakota The latter extends from Chicago through the territory south of the North Western, but also has lines extending to Montana, through Wyoming Another line extends north to the Twin Cities

In contrast to these two roads, the Great Northern, the Northern Pacific, and the Chicago, Milwaukee, St Paul & Pacific reach the Coast

The Great Northern and the Northern Pacific extend from St Paul, Minneapolis, and Duluth to Portland, Tacoma, and Seattle The Great Northern and the Northern Pacific, however, jointly control the Chicago, Burlington & Quincy, and consequently have direct connection with Chicago These roads parallel each other, the Great Northern running along the Canadian border, while the Northern Pacific occupies a more southerly position A plan for unification of these roads was approved by the Interstate Commerce Commission in February, 1930, on condition that they divest themselves of control in the Chicago, Burlington & Quincy The condition was too onerous, however, and the plan was dropped in February, 1931 This plan contemplated operation of the lines of these two roads and the Spokane, Portland & Seattle Railway through lease of their properties to a new operating company, the Great Northern Pacific Railway Both the Great Northern and the Northern Pacific carry substantial quantities of grain and iron ore [17]

The sketch here given of the transportation system of the United States, while centered around the more important systems, does not include all of the larger roads, nor any of the smaller roads It does, however, cover the bulk of the railroad mileage in the United States For the specialist in railroad securities, however, further study is advisable, for the investment standing of various railroads depends on many diverse factors, including the economic development of the territory they serve, the physiography of the country they traverse, and the extent to which they connect with strategic terminals

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[17] The student of American railway finance will do well to familiarize himself also with the great Canadian railways—the Canadian Pacific and the Canadian National Lines, comprising the Old Grand Trunk, the Grand Trunk Pacific, the Canadian Northern, and the Intercolonial

# 14

# Analysis of Railroad Securities

**Plan of analysis: statistical difficulties.** A series of comparisons that may be made of individual roads for the purpose of determining the investment merit of their securities will now be considered In such a study, the general procedure to be followed is similar in many ways to that used in connection with the analysis of utility or industrial companies A survey is first made of the road's location, the character of the territory served, its industrial development, the nature of the terrain over which the road runs, and other physical characteristics that have a direct bearing on its profit-making possibilities Subsequently, the financial structure and operating results of the road may be studied through the various reports rendered either to the Interstate Commerce Commission or to the investing public The entire problem of railroad analysis is by no means simple, despite efforts that have been made to standardize all railroad reports for purposes of statistical comparisons There are, after all, many elements that can never be standardized The character and amount of traffic hauled by any given road, the extent of its mileage, its terminal connections, and the nature of the terrain over which the road operates are all elements that vary for different companies, thus making statistical comparisons exceedingly difficult This situation is easily pictured by a hasty comparison of two such roads as the New York Central and the Missouri Pacific The first road is a system operating through thickly populated territory, connecting very important terminals, and enjoying diverse traffic The second road operates in a sparsely settled area, and, while it serves many of the more important localities in its territory, it is inconceivable that it should be called upon under present conditions to handle the same amount of traffic per mile of road as the former road handles. What does this mean to the analyst? It means that very few of the ratios of operation or capitalization can be compared for the two roads. In so important a matter as capitalization, one finds that the New York Central has approximately $142,000 of capitalization outstanding per mile of road operated, whereas the Missouri Pacific is capitalized at about $87,000 per mile. This disparity loses significance, however, when it is realized that the New York Central carries about one and two-thirds times as much freight per mile of road as the Missouri Pacific, or in about the same ratio as capitalization.[1] In view of a much heavier traffic density, the former road can support a heavier capitalization.

A large portion of the freight carried by the New York, New Haven & Hartford railroad is known as high classification freight and pays a much higher rate per ton-mile than do such items as coal, ore, and other bulky commodities. Each ton of freight carried on the New York, New Haven & Hartford in 1948, yielded on the average a gross revenue of 2.30 cents, while the Norfolk & Western, which operates in the Pocahontas coal district, received only 0.83 cents for each ton mile carried. However, high-rate traffic may entail heavier handling costs and travel short distances. Among the relatively few prosperous roads during the depressed 1930's were some that had a very high proportion of bituminous coal traffic, such as the Chesapeake & Ohio and the Norfolk & Western.

These simple illustrations are given to show that to be of the greatest value comparisons should involve roads that are similarly situated in respect to character of traffic, territory served, and length of road operated. Otherwise serious errors in judgment are likely.

With this word of caution, we may turn to certain matters that have a direct bearing on the status of a road, but that are somewhat beyond the control of the management. Thereafter, consideration will be given to a number of ratios or units of measurement by which the operating results of roads may be compared or analyzed.

**Outside factors: nature of terrain.** The location of a road, the curves and especially the grades it encounters, the character of the freight originating in the territory, and the potential volume of business are factors that may have involved managerial problems when the road was originally constructed. After a line is already built and is operating, however, such matters are largely settled, unless capital expenditures are subsequently undertaken to eliminate grades, straighten curves, or otherwise improve the road's physical layout. The territory can also change through subsequent population growth or industrial development.

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[1] Capitalization here includes capitalized rentals, in order to give effect to the leased mileage, which is, of course, included in the item "miles of road operated," used in computing traffic density. Data from *Moody's Manual of Investments: Railroad Securities* (New York: Moody's Investors Service, 1918).

The grades encountered are important, because they affect operating costs and limit the average trainload that can be hauled over any division or branch. Let us suppose that two roads are substantially similar in all respects, except that one encounters at certain points on its line grades as steep as 2 per cent, while the other road runs over practically level country.[2] Which of these two roads will be able to show the better operating costs? Undoubtedly the latter, for each 1 per cent increase in grade may be said to cut the hauling capacity of an engine in half. For this reason, the New York Central lines, with practically a level route from New York to Chicago, have a decided advantage over the Pennsylvania and the Baltimore & Ohio roads, which cross the Allegheny Mountains. It is true that engineering skill is often employed in eliminating grades, but this adds to the road's capital investment and hence increases fixed charges. A road that naturally enjoys level territory has a permanent advantage over one that encounters grades, even if the latter is able subsequently to eliminate these grades. The matter of curvature has about the same effect on railroad operation as grades. Sharp curves cut down the average train-load and add to the cost of operation, although they present a somewhat less serious problem than do heavy grades.

**Character of traffic.** Another matter that is partly beyond the control of the management of a road is the type of traffic that it is offered. Here, again, the management of a particular road can, it is true, assist in the building up of industries along its lines and thus diversify to some extent the character of its traffic, yet the kinds of freight offered will depend a great deal on the particular economic conditions within the area that the road serves.

Roads like the Chesapeake & Ohio and the Norfolk & Western are known as the soft-coal carriers, in that they run through territory in which the mining of bituminous coal is the leading industry. The bulk of their traffic, therefore, consists of bituminous coal. Other roads, like the Reading, the Delaware, Lackawanna

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[2] A grade of 1 per cent may be expressed as a grade where there is a rise of 52 feet per mile, or 1 foot per 100 feet.

& Western, the Lehigh Valley, and the Delaware & Hudson, are known as the hard-coal carriers, even though the relative importance of the anthracite tonnage has declined greatly with the passage of the years. The Northwest roads, such as the Chicago, Milwaukee, St. Paul & Pacific, and the Northern Pacific are still sometimes spoken of as the grain roads, although their freight statistics show that no longer does an abnormally large part of their traffic consist of products of agriculture.

The Interstate Commerce Commission requires that each road keep records showing the percentage of the total freight traffic carried under each of the following groups:

1. Products of Agriculture
2. Products of Animals
3. Products of Mines
4. Products of Forests
5. Manufactures and Miscellaneous
6. Merchandise (less-than-carload lots)

The following table, which is given for illustrative purposes, compares the different kinds of freight traffic of five important railroads in various parts of the country. Only the Norfolk and Western (Pocahontas region) with its heavy dependence (82 per cent) upon the soft coal traffic is notably lacking in diversification. However, other roads reflect their sectional interests: the New Haven (New England) with half of its freight traffic in Manufactures, and the Atchison (Southwest) with a fourth in Agriculture. The primary industries of a region, such as the farm products of the Atchison, represent the wealth produced that will pay for a return flow of traffic such as Manufactures. Both the New York Central (Great Lakes region) and the Southern are regarded as well diversified in their traffic because of a mixture of farm, manufacturing, and mining interests, yet they show a high proportion

COMPARISON OF FREIGHT TRAFFIC OF
TYPICAL RAILROADS 1947

(Per cent of Ton-Miles)

| *Products* | *N. Y., New Haven & Hartford* | *New York Central* | *Norfolk & Western* | *Southern* | *Atch., Topeka & Santa Fe* |
|---|---|---|---|---|---|
| Agriculture | 10.3 | 6.9 | 2.3 | 7.9 | 25.5 |
| Animals | 3.0 | 1.5 | 0.3 | 0.8 | 3.2 |
| Mines | 25.9 | 56.0 | 82.1 | 46.5 | 26.8 |
| Forests | 4.4 | 2.4 | 2.2 | 10.9 | 4.8 |
| Manufactures | 49.8 | 31.5 | 12.4 | 30.7 | 38.4 |
| Merchandise | 6.5 | 1.7 | 0.7 | 3.2 | 1.3 |
| | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

of Mines tonnage This is largely the movement of coal that provides the energy for driving our industrial plants and utilities and heating homes

We shall discuss shortly two other factors closely related to the kinds of traffic profitability, which depends upon rates, length of haul, and stability, and also the possibility of certain kinds of traffic being more subject to the risk of diversion to competing forms of transportation

**Dangers of concentrated traffic** A fairly diversified traffic is desirable and the major sources of traffic should be permanent To illustrate the disadvantages of concentrated traffic to a road, one has but to consider the effect of a coal strike upon the revenues of a coal road Any factor that can sharply reduce the traffic supplied by the dominant industry in the territory of an undiversified railroad is a threat to its revenues and earnings The threat may be temporary, as in the case of a strike, or it may cause permanent injury, as in the case of the exhaustion of mineral or other natural resources of an area Manufacturing industries may also migrate if conditions are too unfavorable

The case of the old Pere Marquette is an example frequently cited to show the dangers that may result from poorly diversified traffic This road was originally built to serve the rich timber lands of Michigan For a time all went well, but, as the lumber was cut off, traffic dwindled and earnings declined The inevitable result was receivership and reorganization In fact, two reorganizations were necessary before the road finally emerged as a going concern The growth of other industries in its territory, notably the automobile industry in the Detroit area, subsequently changed the situation materially Nevertheless, the dependence upon business conditions in a limited area, primarily the state of Michigan, was a chief factor in making its subsequent merger with the Chesapeake and Ohio logical

The business of a railroad is different from that of a factory in that its plant and equipment are definitely committed to the one business of furnishing transportation services If the road's business centers largely on the transportation of only one article, and if the demand for or source of supply of that article falls off, the road is helpless A few roads with high traffic concentration have fared particularly well during depression The Chesapeake & Ohio and the Norfolk & Western were notable in this respect during the 1930's Some statisticians are inclined to point out the vulnerability of such roads, however, on this very ground On the other hand, roads such as the Pittsburgh & Lake Erie, heavily interested in coal, ore, and iron and steel tonnage, and the former Pere Marquette, confined to a territory greatly affected by automobile production, suffered much more than average in the depression years following 1929. Traffic diversification is regarded as protection against long-term failure of business rather than against the shorter-run ills of the business cycle.

**Diversified traffic.** Roads that lack diversified traffic are affected in other respects. The Lehigh Valley, the Delaware & Hudson, and other coal-carrying lines are hampered by the fact that much of their traffic moves only one way. All these roads are required to have special equipment for hauling coal, yet the coal moves one way only. On the other hand, empty cars have to be hauled back to the mines, and this hauling involves a cost with no corresponding return. It might also be added that roads with highly concentrated traffic suffer from seasonable depressions and periods of peak movements. In order to meet the heavy movement of traffic at certain times of the year, it is necessary to have facilities that lie idle during other months. Diversified traffic results in a more even distribution of business throughout the year.

**Traffic density.** The next matter to consider in analyzing railroad securities is that of *traffic density*. A road's traffic is customarily divided into two major groups—freight and passenger. The *freight density* of a road is found by dividing the number of tons of freight carried one mile by the number of miles of road operated. *Passenger density* is similarly obtained by dividing the number of passengers carried one mile by the number of miles of road operated. By thus comparing the amount of freight or the number of passengers carried, in terms of the ton-mile or the passenger-mile unit, with the number of miles of road operated, we have a ratio that indicates the intensity with which the facilities of one road, as compared with those of another road, are used. In this connection let us consider the freight and passenger density of five roads representing five sections of the country.[8]

TRAFFIC DENSITY OF SELECTED ROADS

(000's Omitted)

| | *Average 1937–1941* | | *1948* | | *% Freight Density 1948* |
|---|---|---|---|---|---|
| | *Freight* | *Passenger* | *Freight* | *Passenger* | *to 1937–41* |
| Pennsylvania | 3,816 | 333 | 5,729 | 597 | 150 |
| N Y, New Haven & Hartford | 1,502 | 765 | 2,307 | 1,238 | 154 |
| Southern | 1,192 | 85 | 2,132 | 127 | 179 |
| Atchison, Topeka & Santa Fe | 1,006 | 80 | 2,522 | 173 | 251 |
| Northern Pacific . | 914 | 38 | 1,634 | 48 | 179 |

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[8] Compiled from *Moody's Manual of Investments Railroad Securities*, 1949.

The Pennsylvania operating in densely populated trunk-line territory carried more freight by far than any of the other roads shown Only the New Haven, noted for its heavy New York City commuter traffic showed heavier passenger traffic density In comparing 1948 traffic with the five-year average 1937–1941, the reader notes that growth has been more pronounced in the South and the West than in the trunk-line and New England Territory Greater population and industrial growth have been witnessed in the former sections of the country Such comparisons are valuable but in studying the individual year, the investor must be alert to avoid placing too much emphasis on temporary conditions resulting from such factors as unusual crop conditions, extraordinary weather, or even cyclical factors

Traffic density depends in a measure on the territory that a railroad serves, its terminals, and its connections with other railroads Roads that traverse densely populated areas or that connect important cities will have a greater traffic density than roads that serve thinly populated areas It is also important that a road be so situated as to enable it to serve one or more important terminal cities A road that connects Chicago with the Gulf, with Mississippi or Missouri river points, or with Pacific or Atlantic cities, has an excellent opportunity to make arrangements with other roads for reshipment of traffic over long distances A road that merely serves an outlying area and acts largely as a feeder for other lines is at a disadvantage in this respect Such a road is restricted to traffic that originates or is consumed in its own area The business of handling through shipments is possible only for roads that connect important cities If the student will refer to a railroad map and note the areas and the important cities served by the trunk-line systems the New York Central, the Pennsylvania, and the Baltimore & Ohio, and such a road as the Atchison, Topeka & Santa Fe, which traverses half a continent, he will note that each of these systems is advantageously located in this respect[4] In addition, some of the roads included in the various systems created by stock ownership are substantially strengthened by the outlets and additional sources of traffic thereby afforded them

The roads that offer the greatest opportunities for speculative profits at the present time are those serving rapidly growing areas Some Southwestern roads showed large increases in traffic and revenues during the years prior to 1930 and more recently on account of the growth that took place in the territories served Future increases in density and revenues may reasonably be expected from the roads in that section. The New York Central, the Pennsylvania, and the New York, New Haven & Hartford serve areas where expansion in traffic is more uncertain and the opportunities for speculative profits are more limited. Roads that at present have a low traffic density and are located in developing territory are in a position to take on additional business with no substantial increase in plant and with a less-than-proportional increase in operating expenses.

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[4] Maps of the principal railroads appear in *Moody's Manual of Investments, Railroads*

**Revenues per ton-mile of traffic carried.** In connection with traffic density, it is also important that one consider the nature of traffic handled. The mere fact that one road has a traffic density that is two times that of another road is not significant by itself, since the former road may have a relatively large amount of low-grade freight paying a low rate. The average compensation per ton-mile of freight carried is shown for the same railroads for which the classes of freight traffic were compared above.

TON-MILE REVENUE OF SELECTED RAILROADS, 1948

| | *Amount* |
|---|---|
| New York, New Haven & Hartford | 2.30 cents |
| New York Central | 1.34 cents |
| Norfolk & Western | 0.83 cents |
| Southern Railway | 1.50 cents |
| Atchison, Topeka & Santa Fe | 1.30 cents |

Source: *Moody's Manual of Investments, Railroad Securities, 1949*

The reader immediately notes the high average rate of approximately 2 1/3 cents for each ton-mile carried by the New Haven with its high proportion of Manufactures traffic. In contrast the coal-carrying Norfolk & Western charged less than a cent per ton-mile. A car of coal requires little service, can be moved at ordinary speed, causes few claims for damage in transit, and can be handled in large lots, often in solid trainloads. All these factors make for low transportation costs, and such freight can be handled profitably at a low rate. Differences among the three other roads are much less and they fall closer to the general average. Doubtless their differences would be explained on the basis of the same factors just mentioned plus the cost factor of the average length of haul.

**Length of mileage and length of haul.** The length of mileage operated by a road is another general factor to be considered. As a rule, roads with long mileage enjoy diverse traffic and long hauls. Long hauls are often more profitable to a road than short hauls, because handling and terminal costs are proportionately less Regardless of the length of haul, terminal costs at both ends of the haul are necessary For this reason a road or system operating less than 1,000 miles is not ordinarily profitable The exceptions are those roads that operate through very densely populated areas or that connect or serve important terminals

The presence of extra main-line trackage likewise indicates a better utilization of the system It has been estimated by railroad engineers that the carrying capacity of a railroad is increased from 2½ to 5 times by double tracking The presence of double tracks increases the rate of speed at which trains may be run, eliminates the delays frequently incurred where trains meet at turnouts, and makes possible much greater efficiency in train operation

**Passenger versus freight traffic.** If one looks at the composite operating results of all Class I roads in this country, he will note that freight business contributes more than any other single item to total revenues The freight end of the railroad business is considerably more important than the passenger end, as shown by the figures from the combined income account of all Class I roads, given in the following table [5]

COMPARISON OF TOTAL REVENUES AND FREIGHT AND PASSENGER REVENUES OF CLASS I ROADS IN THE UNITED STATES

| *(Millions of Dollars)* | *1920* | *1930* | *1940* | *1949* |
|---|---|---|---|---|
| Total revenues | $6,178 | $5,281 | $4,297 | $8,580 |
| Freight | 4,317 | 4,076 | 3,537 | 7,048 |
| Per cent of total | 70 | 77 | 82 | 82 |
| Passenger | $1,287 | $ 728 | $ 417 | $ 861 |
| Per cent of total | 21 | 14 | 10 | 10 |

A few roads, such as the New York, New Haven & Hartford, and the Long Island, have very substantial passenger revenues Their passengers are largely persons who commute daily to work in New York City In the case of the Long Island Railroad, almost all of whose stock is owned by the Pennsylvania Railroad, passenger revenues consistently amount to more than twice freight revenues. The passenger density of this road is the highest of any steam railroad in the country [6] These roads, however, are the exception, not the rule Nevertheless, railroads that operate a passenger service find it necessary to carry certain fixed expenses as a result, and so find it advantageous to hold as much business as possible They have even found it profitable to make a heavy investment in new equipment for this purpose, especially for long-haul rides

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[5] Compiled from *Statistics of Railways in the United States,* Interstate Commerce Commission

[6] *Moody's Manual of Investments Railroad Securities* (New York Moody's Investors Service, 1947), p 358

After 1920, there was a country-wide tendency for passenger business to decline, while freight business was still growing moderately When business revived after 1933, it continued to lag in the ensuing business upswing Not until the huge movements of military personnel and gasoline rationing during World War II thrust an unheard of burden on the railroads was there a real upsurge in passenger traffic The impetus carried forward in the postwar years so that the level of the 1920's was surpassed However, a declining trend has reappeared, although the railroads are combating the situation by making a heavy investment in new equipment

The rise of the private automobile, and to a less extent the interurban bus line, has made much heavier inroads upon passenger traffic than has the truck upon freight traffic The truck has gained especially in the movement of short-haul, high-rate traffic Time is saved by a door-to-door haul that eliminates the handling that slows movement in the congested city terminals of railroad freight yards But where the average haul is long, transportation by rail has generally proved more economical than transportation by truck In view of the preceding tendencies, it is essential to study carefully the manner in which individual roads have fared in respect to passenger and freight traffic increases or decreases and to consider their future prospects under changed conditions

During the 1930's, the trucking industry was able not only to benefit from the lower prices that determined its costs but also to reduce wages in a manner that was impossible for the railroads, which were manned by skilled workers, who were strongly unionized Both motor trucks and automobiles were rapidly increasing during the period for which figures are shown above Today they have filled their logical niche in a transportation field already fairly full. Any future expansion will depend upon increased efficiency and cost reductions, which may be counterbalanced by similar steps on the part of the railroads New and more efficient equipment may make possible lower per ton-mile and per passenger-mile costs However, the shorter service life and more frequent scrapping of old equipment by the user of motor trucks means a flexibility in meeting obsolescence that will require the most alert and aggressive action if it is to be met successfully by railroad management

**Specific tests of operating efficiency; analysis of financial statements.** Analysis of the second group of factors—those over which the management has a direct control—requires a study of the financial statements issued by the separate roads In contrast with the wide differences found in the accounting practices of industrial and, to some extent, of public utility corporations, one finds a pleasing uniformity in railroad accounts All roads engaged in interstate commerce are required to keep their uniform accounts as prescribed by the Interstate Commerce Commission Furthermore, the completeness with which information is given enables a much more valuable comparison to be made of various roads than would otherwise be possible

*The income account* The basic form of income account now prescribed by the commission follows·

STANDARD FORM OF INCOME ACCOUNT FOR RAILROADS

*Operating Income*

Section I —Operating Revenues
    Freight revenues
    Passenger revenues
    Other transportation revenue (including mail, express, etc).
    Nontransportation revenue (incidental as diners, etc)
  Total operating revenue

Section II —Operating Expenses
    Maintenance of way and structures
    Maintenance of equipment
    Traffic expenses
    Transportation expenses
    General and miscellaneous expenses
    Transportation for investment (credit)
  Less total operating expenses
  Net revenue from railway operations

Section III —Less railway tax accruals
    Railway operating income

Section IV —Add
    Rent from locomotives
    Hire of freight cars (credit)
    Rent from passenger train cars
    Rent from joint facilities
    Other income

Section V —Deduct
    Hire of freight cars (debit)
    Rent for locomotives
    Rent for passenger cars
    Rent for joint facilities
    Rent for other equipment
  Net railway operating income

*Other Income*

Section VI —Add Non-operating Income
    Dividends received
    Income from funded securities
    Income from unfunded securities and accounts
    Rents received
    Miscellaneous income
  Gross Income

*Deductions from Gross Income*

Section VII.—Deduct Miscellaneous deductions from income
Income available for fixed charges
Deduct Fixed Charges
Rent for leased roads and equipment
Interest on funded debt—fixed
Interest on unfunded debt
Amortization of discount on funded debt
Income after fixed charges
Interest on funded debt contingent
Net income

*Disposition of Net Income*

Section VIII.—Deduct
Income applied to sinking and other reserve funds
Dividends paid
Net income transferred to Earned Surplus—Unappropriated

The income account of the Pennsylvania Railroad Company for the year ended December 31, 1949, is given below for illustrative purposes.[7] It will be noted that this account follows very closely the standard form shown immediately above.

INCOME STATEMENT
OF THE PENNSYLVANIA RAILROAD COMPANY

Year ended December 31, 1949

| | |
|---|---|
| *Operating Income* | |
| Railway operating revenues | $848,211,159 |
| Railway operating expenses | 729,413,756 |
| Net revenue from railway operations | $118,797,403 |
| Tax accruals | 61,808,287 |
| Railway operating income | $ 56,989,116 |
| Hire of equipment—debit balance | 17,716,421 |
| Joint facility rents—debit balance | 2,094,975 |
| Net railway operating income | $ 37,177,720 |
| *Nonoperating Income* | |
| Income from lease of road and equipment | $ 1,111,771 |
| Miscellaneous rent income | 2,425,168 |
| Dividend income | 40,155,846 |
| Income from funded securities | 3,072,377 |
| Income from unfunded securities and accounts | 652,699 |
| Income from sinking and other reserve funds | 7,199,865 |
| Miscellaneous | 287,622 |
| Total nonoperating income | $ 54,905,348 |
| Gross income | $ 92,083,068 |

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[7] Taken from the *One Hundred and Third Annual Report of The Pennsylvania Railroad Company* for the year ended December 31, 1949, p. 1 of Statistical Supplement.

*Deductions from Gross Income*

| | |
|---|---|
| Rent for leased roads and equipment | $ 46,768,038 |
| Miscellaneous rents | 470,242 |
| Miscellaneous tax accruals | 199,418 |
| Interest on funded debt | 24,846,471 |
| Interest on unfunded debt | 148,148 |
| Miscellaneous | 647,243 |
| Sinking and reserve funds—accretions | 6,528,881 |
| Total deductions from gross income | $ 79,608,441 |
| Net income | $ 12,474,627 |

*Disposition of Net Income*

| | |
|---|---|
| Sinking and other funds—appropriations | $ 1,479,678 |
| Construction expenditures and advances—leased lines and affiliated companies borne by the Pennsylvania Railroad Company | 5,284,852 |
| Balance available for dividends and other corporate purposes—transferred to credit of profit and loss | $ 5,710,097 |

*Profit and Loss Statement*

| | | |
|---|---|---|
| Amount to credit of profit and loss, Dec. 31, 1948 | | $205,722,361 |
| Add Balance of income for the year | | 5,710,097 |
| | | $211,432,458 |
| Deduct Dividend (1½%) paid May 2, 1949 | $9,875,816 | |
| Sundry net charges | 123,417 | 9,999,233 |
| Amount to Credit of Profit and Loss, Dec. 31, 1949 | | $201,433,225 |

The various sections of this report may now be considered in greater detail. Section I in the original annual report showed the various sources of gross revenues in detail.

| | *Amount*<br>(Thousands of Dollars) | *Per cent* |
|---|---|---|
| Freight | $619,091 | 73.0 |
| Passenger | 149,242 | 17.6 |
| Mail | 29,819 | 3.5 |
| Express | 6,176 | 0.7 |
| All other transportation | 11,076 | 1.3 |
| Incidental | 31,919 | 3.8 |
| Joint facility | 887 | 0.1 |
| Total | $848,210 | 100.0 |

The items require no elaborate explanation. They include the total revenues of the road as derived from operating trains over its owned and its leased mileage. Nonoperating income is excluded from this section. Obviously the greater part of the operating revenues of a road will be derived from its freight and passenger business. The average figures for the United States as a whole show that approximately 82 per cent of all operating revenues are derived from handling freight, about 10 per cent from passengers, and the balance from mail, express, and incidental transportation services.[8]

**Operating revenues per mile of road.** An excellent test, very similar to that for traffic density, may be made by dividing operating revenues by miles of road operated. This study may be further refined for comparative purposes if desired, by ascertaining freight revenues or passenger revenues per mile of road. "Revenues per mile of road operated" is a better measure of the amount of traffic carried by a road than is either freight density or passenger density as previously defined (see page 394), for it gives weight not only to the amount of traffic per mile of road, but to the dollar value of this traffic as well.

It is interesting to note the extent to which revenues per mile of road vary in different sections of the country. The following table shows the combined results for selected roads operating in different geographical divisions of the country for the year 1947.[9]

MILES OF ROAD OPERATED, OPERATING REVENUES, REVENUES PER MILE OF ROAD, AND OPERATING RATIOS, 1947

| *Region* | *Miles of Road Operated* | *Operating Revenues (Millions of Dollars)* | *Operating Revenues per Mile of Road* | *Operating Ratios* |
|---|---|---|---|---|
| New England | 6,531 | $ 303 | $46,443 | 81.2 |
| Great Lakes | 23,395 | 1,420 | 60,693 | 81.7 |
| Central Eastern | 23,886 | 1,719 | 71,975 | 83.3 |
| Pocahontas | 7,969 | 514 | 64,449 | 70.3 |
| Southern | 38,180 | 1,182 | 30,956 | 79.5 |
| Northwestern | 45,458 | 965 | 21,221 | 78.0 |
| Central Western | 53,599 | 1,838 | 34,297 | 73.9 |
| Southwestern | 28,020 | 744 | 26,553 | 73.4 |
| All regions | 227,038 | $8,685 | $38,253 | 78.3 |

One of the difficulties encountered in analyzing railroad securities is that no one ratio taken by itself is significant. This is true of revenues per mile of road. Until we know the operating ratio of the road and its capitalization per mile, it is impossible to derive any very intelligent deductions from per mile revenue statistics. If one road requires 80 per cent of its operating revenues to meet operating expenses, while another requires only 65 per cent, it is at once obvious that each dollar of operating revenue received is more profitable to the second road than to the first In this respect the Pocahontas roads, with their average operating ratio of 70 per cent, may be contrasted with the three northeastern regions with ratios over 80 per cent Furthermore, a low operating ratio makes for better earnings stability A one-point rise in a 70 per cent ratio absorbs about 3 per cent of the margin (one thirtieth) as compared with 10 per cent (one tenth) for a 90 per cent ratio

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[8] See table on p. 397.

[9] *Statistics of Railways in the United States*, 1947.

A high volume of revenues plus a low operating ratio spell profitability However, a high volume of revenue per mile of road is commonly associated with high investment in road and equipment[10] The Great Lakes region, for example, with its trunk-line roads, has a dense population, heavy traffic, and heavy investment per mile of road In contrast, the southwestern roads have lower traffic and revenues and also lower investment per mile We go back to the general principle of investment analysis that a complete picture of profitability must consider both the relation of sales (gross revenues) to investment (chiefly, road and equipment), or capital turnover, as well as the margin of earnings Actually, the railroad's operating ratio is better suited to measuring efficiency than profitability because it omits the elements of taxes (all kinds), hire of equipment, and joint facility rents Only the balance after these items, called the "net railway operating income," gives the margin of earnings from operating factors that is available for the investor During World War II, when operating ratios were very favorably low because of heavy traffic volume, an unusually high per cent of gross was absorbed by federal taxes on income

**Operating and maintenance ratios.** The operating ratio of a railroad is found by dividing its *total operating expenses* by its *total operating revenues*[11] The resulting figure indicates the percentage of gross revenues required in the operation of the business While it is true that the operating ratio of a road gives a general picture of the road's efficiency, such information is not in itself complete The truth of this statement becomes apparent when one examines more closely the significance of the various items contained under Section II of the Income Account Let us, therefore, analyze in some detail each of the subdivisions found under the heading "Operating Expenses "

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[10] For further consideration of capitalization per mile of road and its effect on railroad securities, see p 416

[11] For data on average ratios for 1912–1949, see p 379

The item "Maintenance of way and structures" includes all items of expense incurred in the repairing and renewing of the railroad's track, roadbed, bridges, tunnels, stations, docks and buildings, interlocking signal devices, power plants, and transmission lines, as well as write-offs for depreciation on these items In other words, the expenses segregated under this item cover all outlays incurred in maintaining the so-called *way and structures* of the road in a proper state of repair, as well as such depreciation in values as occurs thereon through ordinary wear and tear, age and obsolescence Any "retirement" expense—that is, loss arising from the retirement of property not previously cared for by the depreciation allowances—is also included Railroad accounting differs from accounting in other fields in that it combines repairs, depreciation, and retirements under the title of maintenance, instead of identifying it with repairs alone, as is usually the case Supporting schedules in the railroad's annual report permit the study of these three subdivisions in detail

"Maintenance of equipment" includes items of expense incurred in repairing and renewing the rolling stock of the road—that is, its cars, locomotives, car shops, shop machinery, and the like It also includes write-offs for depreciation on these assets In this way the assets of the road are divided into nonmovable (way and structures) and movable (rolling stock and assets associated therewith)

"Traffic expenses" includes all costs incurred in procuring business for the railroad They may be compared with the selling expenses of an industrial concern The traffic manager of a railroad is really its sales manager, since it is he who is responsible for getting business Included under traffic expenses, therefore, we find expenses and salaries of traffic managers, freight solicitors, advertising, industrial, and immigration bureaus

"Transportation expenses," sometimes called "Transportation rail-line," includes all expenses incurred in moving trains To this account are charged the wages of station employees, flagmen, yardmen, clerks, watchmen, engineers, and trainmen, the cost of dispatching trains, fuel and supplies for locomotives, expenses for water supply, the operation of joint yards and terminals, and telegraph and station service expenses In short, all costs of train movement are included in this subdivision of the Income Account

Under the heading "General expenses" are grouped the salaries of the general officers of the road and their office expenses, including salaries of clerks and attendants, expenses for office supplies, stationery, and legal work, pensions to old employees, and other so-called indirect expenses "Miscellaneous expenses" includes expenses incurred in the operation of dining cars and restaurants, grain elevators, stockyards, and in the furnishing of other special services that are collateral to the main business of the road

"Transportation for investment (credit)" is set up to absorb all expenses connected with the movement of company materials, transportation of company officials using passes, and other costs involved in the transportation of materials or persons in connection with construction This account is then deducted from total operating expenses and added to the asset being constructed, in order that total railway operating expenses may represent only the movement of revenue traffic

The first conclusion generally drawn from a comparison of the operating ratios of two roads is that the road with the lower ratio is the one more efficiently operated, and should therefore be considered the better medium of investment, other things being equal This assumption is not entirely true, however, because certain of the various items making up operating expenses have a different effect on the investment status of the road's securities than do other expense items Let us consider in this connection the amount spent for maintenance, which is discretionary within a certain range The average amount spent by all roads in the United States for maintenance is about 33 per cent of operating revenues If, however, a given road spends more on maintenance items than does another road, it may mean that its physical assets are being kept in a better state of repair In fact, it is entirely possible for a road to go so far in maintenance expenditure that in substance it actually increases the capital value of its assets Yet, so long as such expenditures are charged to income and not to asset accounts, the result is an increase in operating ratios One may naturally ask the question· "Does this policy truly register inefficiency?" On the other hand, another road, by neglecting its way and structures and equipment, may show much lower operating expenses and a lower operating ratio Again, it may be asked "Is the second road more efficiently operated than the first?" A mere examination of the operating ratio of a railroad fails to give a complete picture of its operating efficiency

It is possible to illustrate this situation by means of two hypothetical examples Let us consider that Roads *A* and *B* are similar in respect to territory served and the nature of traffic density, and operate approximately the same amount of gross mileage The percentages of total operating revenue consumed by the various classes of operating expenses for both roads are as follows [12]

| *Item* | *A* | *B* |
|---|---|---|
| Per Cent of Operating Revenues Consumed by | | |
| Maintenance of Way and Structures | 14 | 11 |
| Maintenance of Equipment | 18 | 13 |
| Transportation Rail and Water | 39 | 44 |
| Traffic and General | 6 | 7 |
| Total Operating Expenses | 77 | 75 |

In the above illustration, Road *A*'s operating ratio is higher than hat of Road *B*, yet a closer examination shows that Road *A* is putting a much larger percentage of its operating revenues back into maintaining its properties than is Road *B*, and is actually conducting its real business, *that of furnishing transportation*, in a more economical manner than Road *B* This fact is indicated by its *transportation ratio*, as the ratio of transportation expense to operating revenues is called. Thus, if one seeks an indication of the operating efficiency of one road as compared with another, he should go further than a mere comparison of operating ratios A far better index of the operating efficiency of a road is the ratio of "Transportation, Traffic, and General Expenses" to "Operating Revenues" Actually, all these ratios are the result not only of efficiency but also of external conditions beyond the control of management as well

Again, it is necessary to add a word of caution In comparing the transportation ratios of various roads, one must consider the relationship that exists between classes of freight and gross revenues The most valid comparisons are between roads that are similarly situated and that move essentially the same kinds of traffic

**Analysis of maintenance expenses· equipment.** Some indication of the liberality of a road in respect to its maintenance of equipment may be had by dividing maintenance of equipment expenses by gross revenues This will show the percentage of gross revenues devoted to the maintaining of equipment It is possible to go further and reduce maintenance of equipment expenses to a "per mile of road" basis Even this basis of comparison is open to the fundamental objection that no account is taken of the number of engines that one road has as compared with another If Road *A* has twice as many engines per 1,000 miles of road as Road *B*, the first road obviously should spend more to maintain equipment than the second It is more satisfactory to reduce "maintenance of equipment" to a "train-mile" basis The results of such a comparison are far more satisfactory than the per mile-of-road method, even though it fails to take account of the various types of equipment that a road operates

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[12] The ratios given here for Road *A* approximate the average for all Class I roads of the United States for 1948 Transportation, maintenance, and operating ratios for 55 roads in 1949 and a comparison of the first with prewar 1939 are examined in Jansen, Arthur, "Rail Transportation Ratios Continue High," *Barron's*, April 17, 1950

The most accurate analysis of equipment expenses requires that the amount of maintenance charged to each type of equipment—locomotives, passenger cars, and freight cars—be divided by the number of locomotive miles or car miles registered by each class of equipment While this gives very accurate and comparable data on the maintenance policies of a given road in respect to equipment, the average investor is unlikely to make these computations In some instances the annual reports of the road furnish these ratios In other cases, it is necessary to consult the reports on file with the Interstate Commerce Commission in Washington Therefore the investor, for practical purposes, is likely to rely largely on the ratio of maintenance of equipment to gross revenues, or maintenance of equipment per train-mile For illustrative purposes these ratios are shown for four of the leading northwestern roads for the year 1948 [18]

COMPARISON OF MAINTENANCE OF EQUIPMENT EXPENSE
OF FOUR NORTHWESTERN CARRIERS 1948

| | *Gross Revenues (Thousands of Dollars)* | *Maintenance of Equipment (Thousands of Dollars)* | *% Maintenance of Equipment to Gross Revenues* | *Maintenance of Equipment Per Train Mile* |
|---|---|---|---|---|
| Chicago, Mil , St Paul & Pacific | 254,983 | 45,070 | 17 7% | $1 50 |
| Chicago & North Western | 195,020 | 35,638 | 18 3 | 1 40 |
| Great Northern | 216,342 | 34,059 | 15 7 | 1 55 |
| Northern Pacific | 157,177 | 27,751 | 17 7 | 1 73 |

A further test of the actual physical equipment of a road, quite independent of the amount expended on its maintenance, is found in the percentage of bad-order cars and bad-order locomotives to the total "on line " A road is generally considered as standard that has not more than 6 per cent of its cars and not more than 15 per cent of its locomotives in bad order Thus a check is provided on the current maintenance charges When maintenance is neglected, the percentage of unserviceable equipment will rise in an unhealthy manner Changes in the percentage are often more significant than the actual percentage itself When business is greatly depressed, the unserviceable equipment may not be used, and the service may not suffer, but an accumulation of deferred maintenance is revealed that will burden the expenses in subsequent years The following table shows the average condition and significant tendencies

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[18] Data from *Moody's Manual of Investments, Railroad Securities,* 1949

CONDITION OF RAILROAD EQUIPMENT IN THE UNITED STATES

1920–1949*

Percentages of Unserviceable Freight Equipment

| | *1920* | *1925* | *1930* | *1935* | *1940* | *1945* | *1949* |
|---|---|---|---|---|---|---|---|
| Locomotives | 24 5 | 17 8 | 17 5 | 33 8 | 24 8 | 13 6 | 17 7 |
| Cars | 7 0 | 7 7 | 6 2 | 14 0 | 7 9 | 3 4 | 6 0 |

* Compiled from Interstate Commerce Commission, *Statistics of Railways in the United States*

**Analysis of maintenance expenses. way and structures.** The most obvious ratio for comparing the maintenance of way and structure expenses of one road with another is the percentage of operating revenues used for that expense by each road Another significant ratio for comparative purposes may be obtained if maintenance of way and structure expenses is reduced to a per mile basis by dividing such expenses by the number of miles of road operated This ratio again must be interpreted in the light of the traffic density of the road The per mile maintenance expenditures of a road with a freight traffic density of 1,000,000 would naturally be less than that for a road with a density of 3,000,000, for the wear and tear on the latter road would be substantially greater than on the former For this reason such comparisons are most significant if one first divides the roads to be studied into groups showing approximately the same traffic density, and then ascertains the amounts expended over a period of years for maintenance of way and structure on each road within the group

In actual practice, a further refinement is applied in comparing maintenance expenditures It is at once apparent that the amount required to maintain a four-track road is not twice that required to maintain a two-track road of similar length, nor four times that required to maintain a single-track road A unit known as "miles of track equivalent" is, therefore, computed somewhat as follows If one assumes that each extra mile of main track can be maintained at a cost of 80 per cent of the cost required for a mile of single track, and that a mile of siding can be maintained at 50 per cent of the cost of maintaining a mile of main track, then, by multiplying the number of miles of extra track by .8, and the miles of siding by .5, and adding these results to the number of miles of main track, he will have an adjusted figure representing the number of track miles in terms of maintenance. This figure is used as the denominator for reducing maintenance of way expenditures to an "equated track-mile" basis.

It is possible, however, to avoid making this adjustment and to give proper account to traffic density by the use of revenue train miles as the denominator. Expenditures for way and structures maintenance per revenue train mile, where they are available, are perhaps the best ratio for a comparison of the policies of various roads. In general, the tendency is to neglect maintenance of way in hard times even more than maintenance of equipment, although the reader will have noted from the preceding table that the tendency has been for bad-order equipment to rise in depression and fall in prosperous years. The table below shows the percentage of gross devoted to maintenance of way and structures and the amount of such expenditures per revenue train-mile for selected northwestern roads in 1948.[14]

ANALYSIS OF MAINTENANCE OF WAY EXPENSE, 1948

| | | | | MAINTENANCE OF WAY AND STRUCTURES EXPENSES | | |
|---|---|---|---|---|---|---|
| *Road* | *Gross Revenues (Thousands of Dollars)* | *Maintenance of Way and Structures (Thousands of Dollars)* | *Maintenance of Way and Structures to Gross* | *Per Revenue Train Mile* | *Per Mile of Road* | *Per Equated Track Mile* |
| Chicago, Mil., St. Paul & Pacific | 254,983 | 39,232 | 15.4% | $1.31 | $3,678 | $3,014 |
| Chicago & North Western | 195,020 | 29,702 | 15.2 | 1.17 | 3,685 | 2,931 |
| Great Northern | 216,342 | 37,173 | 17.2 | 1.69 | 4,460 | 3,869 |
| Northern Pacific | 157,177 | 26,655 | 17.0 | 1.66 | 3,864 | 2,980 |

**Other revenues and expenses related to operations.** The final figure from Sections I and II of the standard income account is designated for purposes of present discussion as "Net Revenue from Railway Operations." This subtotal represents the net earnings attributable solely to train operation without any deduction for any taxes, or for the fixed charges, and without reference to so-called nonoperating income or expenses. After tax accruals have been deducted, the "Operating Income" of the road is obtained. To this item are added certain other items, such as revenues received from the rental of equipment, or joint facilities

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[14] *Moody's Manual of Investments, Railroad Securities,* 1949.

Hire of freight cars may be a debit or a credit item, depending on the relative amounts received and charged under the *per diem* arrangement by which freight cars are allowed to go off the parent line A charge of $1 75 per day is allowed to the owning road for all box cars and special rates for other equipment as they are used by other lines On the other hand, the lending road may be using cars of other lines at the same time Consequently, if a line is abundantly supplied with freight cars, it is likely that this item will be a credit, otherwise its receipts will be less than the amounts charged by other roads, and the item will be a debit

When these deductions (or additions) have been made, "Net Railway Operating Income" is secured It is this item that one compares with the valuation of the road's property to determine what rate of return has been earned

**Gross and net income** The addition of nonoperating income, such as dividends received on stocks owned, interest on bonds and notes owned, rents received for leased properties (as distinct from temporary rental of equipment), and miscellaneous income, will give "Gross Income" The source and regularity of this income should be studied Dividends received may be more or less than the earnings of particular stocks In this way, Pennsylvania is said to have "hidden earnings" because in recent years the dividends of its investment subsidiary, Pennsylvania Company, have not reflected its full earnings [15]

The sum of operating and nonoperating income (after the subtraction of the miscellaneous nonoperating deductions) is sometimes referred to as the "Amount Available for Fixed Charges" It is possible to determine at this point the number of times total charges have been earned, but it is not possible to tell by how much margin the charges on any particular issue of bonds have been earned The exact priorities that the various bond issues enjoy in respect to earnings will depend on the security underlying the bonds Discussion of this matter will be deferred until analysis of the balance sheet is taken up, at which time the whole

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[15] Both investment income and fixed charges are in a sense exaggerated in the Pennsylvania report because the income includes dividends and interest on securities of leased railroads, the rents of which are included among the fixed charges The elimination of these counterbalancing amounts is suggested later in the calculation of fixed charge coverage

Nonoperating income is most important and deserves corresponding attention for some roads like Union Pacific For that road, net income from transportation dropped from $42 million in 1948 to $22 million in 1949, chiefly as a result of extreme winter blizzards Other income, mostly from oil and gas properties, rose from $32 to $38 million Total fixed charges were less than $7 million and combined preferred and common dividends $26 million in the later year matter of the position of the various bond issues of a given road is again considered After all fixed charges have been deducted from "Gross Income," some roads will have contingent interest to pay on income bonds as a nonoperating financial charge The balance after all nonoperating items constitutes the Net Income, which is the amount available for special reserves and dividends on the preferred and common stocks of the company The balance, after these charges have been deducted is carried to "Earned Surplus—Unappropriated" in the balance sheet Any surplus reserves previously deducted will be added to the proper accounts which appear as "Appropriated Surplus " They consist of Sinking Fund reserve, Reserve for Capital Improvements or Additions to Property Through Income and Surplus, or similar items All these terms are likely to confuse the nonaccountant for whom such accounts sound like assets Actually they are merely subdivisions of the Surplus account and represent a part of the stockholders' investment in the business The sole purpose of setting such amounts apart from ordinary Earned Surplus is to warn the stockholder that so much of retained earnings is not available for dividends. When the deductions creating such reserves appear in the income account, they should be thought of as "Disposition of Net Income" rather than a nonoperating deduction akin to bond interest even though they are the result of a stipulation in a debt agreement They are retained earnings Sometimes the earnings per common share are reported "after the deduction of mandatory reserves" to show the amount "truly available for dividends " Such a calculation is apt to perpetuate the popular error that distributable earnings can be determined from the income account. No informed investor would expect that dividends must or should approximate the net income for the individual year

For statistical purposes it is frequently desirable to reduce all the main subdivisions of the income account to a per mile basis In this way it is possible to compare different roads in respect to such items as total revenues, operating expenses, and fixed charges, including rentals, on a per mile basis Where per mile figures are used in this way to make a comprehensive study of the earnings and expenses of two or more roads, they have a real value On the other hand, erroneous conclusions may result from an attempt to compare two roads by analyzing only certain items on a per mile basis As already stated, it would be illogical merely to compare the fixed charges per mile for one road with those for another road without referring to earnings, operating expenses, and other income Much the same thing could be said in respect to almost any phase of the work of analyzing railroad securities. A proper conclusion requires the weighing of the relevant individual factors.

**Train movement and traffic statistics.** In addition to the financial data, the investor in railroad securities should examine the operating statistics. The objective is to discover comparative efficiency and trends that suggest more or less profitable operation ahead. Data can be had to discover how heavily freight cars are loaded, how much freight tonnage is being moved per train, what per cent of freight-car mileage represents loaded rather than empty cars, how far the average freight shipment is hauled, and how fast trains are moving. Similar figures can be studied for passenger traffic. Detailed analysis can also be applied to the financial statements. For example, to check on maintenance, the number of cross-ties replaced, the amount and weight of new rail laid, and the age of the rolling stock, both cars and locomotives, can be studied. Operating expenses can be scrutinized to discover the cost and amount of fuel used to pull the train a mile and how much employees are being paid.

At this point we shall merely marshal a few of the figures mentioned for the four selected northwestern roads for 1948.[16]

OPERATING STATISTICS, SELECTED NORTHWESTERN ROADS 1948

| | *Average Load per Car (Tons)* | *Average Revenue Trainload (Tons)* | *Loaded to Total Car Mileage* | *Average Length of Haul (Miles)* | *Ton Miles per Freight Train Hour* | *Average Revenue per Ton Mile* | *Average Revenue per Train Mile* |
|---|---|---|---|---|---|---|---|
| Chicago, Mil., St. Paul & Pacific | 28.6 | 936 | 65.8% | 306.9 | 31,645 | 1.278¢ | $12.63 |
| Chicago & North Western | 27.6 | 944 | 66.3 | 193.8 | 33,772 | 1.355 | 12.79 |
| Great Northern | 32.9 | 1,263 | 64.7 | 276.6 | 43,861 | 1.136 | 14.35 |
| Northern Pacific | 28.5 | 1,098 | 68.6 | 394.1 | 43,645 | 1.217 | 13.37 |

Even among relatively comparable roads, differences in traffic and territory will be reflected in such measures as these. The heavy ore shipments of the Great Northern from the great iron mines result in heavy loading and substantial train loads in the first two columns. Since long hauls are economical, data on that point (Column 4) are also shown. Stress is laid upon train-mile operating figures because many operating *costs* are related to train movement rather than tonnage carried. *Revenues* on the other hand are more closely tied to tonnage and the distance carried. A railroad tries to buy its train-miles at as low a cost as possible and sell as many ton-miles of service for as much as possible.

Because speed is also a factor in economical operation, some lay even more emphasis upon the figure for the number of ton-miles per train-hours of operation (Column 5) than upon the important average revenue trainload in tons (Column 2) They regard the former as the most significant single measure of efficient and economical operation

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[16] Data from *Standard Corporation Descriptions*.

Since some of the unfavorable operating ratios, such as light loading or short hauls, may be counterbalanced by higher revenue, two financial measures, the average revenue per ton-mile and per train-mile, are shown together in the last two columns of the table

**The balance sheet.** The balance sheet has the same general significance in railroad accounting as in industrial or public utility accounting, that is, it represents a cross section of the road's financial condition at a given instant of time For discussion purposes a balance sheet for the Pennsylvania Railroad Company, as of December 31, 1949, is shown on pages 414–415 The arrangement of accounts in this statement conforms closely to the standard by which all railroad balance sheets are published Some of the details of the original are condensed

**Investments.** On the asset side of this statement the first subdivision is headed "Investments" Unlike the balance sheet in other fields, the title covers physical plant as well as security holdings in other corporations Under this caption are listed (1) actual physical railroad property, which includes both its own road and equipment, and improvements made on the property of leased roads, (2) sinking funds, representing assets segregated for the retirement of debt; (3) miscellaneous physical property that is not for transportation service, such as land, buildings, or hotels, and (4) various investments in securities that represent the source of most of the railroad's nonoperating income Such investments comprise chiefly securities of other roads not controlled and of businesses affiliated with the railroad industry Only occasionally are there securities of companies not associated with the business

**Current assets.** The next subtitle, "Current assets," requires no elaborate description The various accounts listed under this heading comprise such items as cash, certain deposits, loans and bills receivable, amounts due from agents and conductors, miscellaneous accounts receivable, inventories, and accruals in the form of interest, dividends, or rents The reader will look for Temporary Investments here and also for any free investments in United States Government obligations under the previous heading that would be available for meeting emergencies

**Other assets.** The remaining assets, consisting of deferred assets and unadjusted debits, are usually of little importance Some of the funds included in deferred assets resemble "working funds,"

### CONDENSED GENERAL BALANCE SHEET OF THE PENNSYLVANIA RAILROAD COMPANY DECEMBER 31, 1949

*Assets*

| | | |
|---|---|---|
| INVESTMENTS | | |
| Road and Equipment Property | | |
| Road | $669,892,284 | |
| Equipment | 919,996,915 | |
| General expenditures | 8,134,008 | |
| | | $1,598,023,207 |
| Improvements on Leased Property* | | 149,440,097 |
| | | $1,747,463,304 |
| Deduct | | |
| Donations and grants | $ 2,644,023 | |
| Accrued depreciation* | 640,086,248 | 642,730,270 |
| Transportation property less recorded depreciation | | $1,104,733,031 |
| Sinking funds and other funds* | | 20,120,511 |
| Miscellaneous physical property | | 4,528,066 |
| Investments in affiliated companies* | | 663,156,616 |
| Other investments* | | 31,969,076 |
| CURRENT ASSETS | | |
| Cash | $ 87,389,898 | |
| Temporary cash investments | 55,348,319 | |
| Cash for railroad retirement and unemployment taxes | 10,890,850 | |
| Loans and bills receivable | 23,954 | |
| Net balance receivable from agents and conductors | 14,932,524 | |
| Miscellaneous accounts receivable | 36,855,628 | |
| Material and supplies | 68,543,375 | |
| Interest and dividends receivable | 4,973,106 | |
| Accrued accounts receivable | 3,588,292 | |
| Other current assets | 655,273 | 283,201,219 |
| DEFERRED ASSETS | | |
| Working fund advances | $ 929,343 | |
| Insurance fund | 12,322,672 | |
| Trust created October 9, 1878 | 137,289,188 | |
| Other reserve funds | 4,425,532 | |
| Other deferred assets | 7,843,863 | |
| | | 162,810,598 |
| UNADJUSTED DEBITS | | |
| Prepayments | $ 299,747 | |
| Other unadjusted debits | 8,753,530 | |
| | | 9,053,278 |
| Total | | $2,279,572,398 |

* Greater detail in original balance sheets

in that they represent amounts left with officers and employees to meet various items of an expense nature Sinking funds, however, are investments made to take care of funded debt retirements and appear in the first section of the balance sheet Unusual items in

### CONDENSED GENERAL BALANCE SHEET OF THE PENNSYLVANIA RAILROAD COMPANY DECEMBER 31, 1949

*Liabilities*

| | | |
|---|---|---|
| STOCK | | |
| Capital stock (par value $50 per share) | | $ 658,387,700 |
| Premium realized on capital stock from January 1, 1909 | | 10,148,229 |
| LONG-TERM DEBT | | |
| Funded debt of Pennsylvania Railroad Company* | $500,781,500 | |
| Funded debt of acquired companies assumed by Pennsylvania Railroad Company* | 3,578,000 | |
| Funded debt assumed* | 7,819,000 | |
| Equipment trust obligations | 181,168,000 | |
| Mortgages and ground rents payable | 64,350 | 693,410,850 |
| CURRENT LIABILITIES | | |
| Traffic and car-service balances | $ 5,004,555 | |
| Audited accounts and wages payable | 32,301,437 | |
| Leased and affiliated companies and various funds | 8,181,263 | |
| Miscellaneous accounts payable | 14,381,812 | |
| Interest matured unpaid | 3,621,555 | |
| Dividends matured unpaid | 105,349 | |
| Unmatured interest accrued | 3,554,979 | |
| Accrued accounts payable | 16,536,249 | |
| Tax liability | 50,323,967 | |
| Other current liabilities | 2,000,273 | 136,011,440 |
| DEFERRED LIABILITIES | | |
| Other deferred liabilities | | 2,052,414 |
| LEASED AND AFFILIATED COMPANIES—CONSTRUCTION | | 1,133,608 |
| UNADJUSTED CREDITS | | |
| Premium on funded debt | $ 355,020 | |
| Reserve for injuries to persons | 6,653,110 | |
| Reserve for loss and damage—freight | 5,797,077 | |
| Maintenance reserves | 8,000,000 | |
| Accrued depreciation—leased property | 126,139,970 | |
| Other unadjusted credits | 4,793,435 | 151,738,612 |
| SURPLUS | | |
| Additions to property through income and surplus | $204,413,133 | |
| Funded debt retired through income and surplus | 68,396,725 | |
| Sinking fund reserves | 1,447,035 | |
| Miscellaneous fund reserves | 150,999,427 | |
| Profit and loss | 201,433,225 | |
| Total surplus | | 626,689,545 |
| Total | | $2,279,572,398 |

* Greater detail in original balance sheets.

the Pennsylvania Deferred Assets are the Insurance Fund and the Trust Fund of 1878 The former represents amounts set aside for self-insurance in excess of current losses, the latter, a voluntary sinking fund, as it were, originally set up to acquire the stocks of leased railroads whose obligations the Pennsylvania had guaranteed. In 1948 that latter arrangement was modified to permit the repurchase of any of the obligations of either the Pennsylvania or its wholly-owned subsidiary, the Pennsylvania Company. When these obligations are bought, they may be retired instead of kept alive in the fund. In 1949, $1,159,000 of guaranteed securities were added to the Fund and $4,918,000 of the Company's own securities were purchased and extinguished at maturity. The Trust Fund would more properly be included with the Investments in Affiliated Companies for analytical purposes.

Unadjusted debits are miscellaneous items not properly included under the other headings. They include prepaid expenses, discount on bonds and stocks issued, and suspense items that are to be added later to some asset or expense account. In other industries the first two of these items would be classed as deferred items. Examples of each type will be found in the Pennsylvania balance sheet.

**Capital items.** The first items appearing under liabilities represent the stock and long-term debt of the company. These accounts, representing the "capitalization," are of special significance to the investor. In railroad analysis, it is customary to examine the proportions both of capitalization (long-term debt and stocks) and capital structure (capitalization plus surplus).

On the average, the proportion represented by bonds is larger for railroads than for industrials. As shown above (page 380), the proportion of bonds to total railroad capitalization (bonds plus stocks) is slightly over one half; the proportion of bonds to the total capital structure (bonds plus net worth), about 39 per cent. Because earning power varies considerably among railroads, much more emphasis is placed upon the relation of earnings to fixed charges than upon the capital structure, although it is desirable that not more than one half of the capital structure consist of funded debt.

Total capitalization, as well as capitalization by classes of securities, may be reduced to a per mile basis by dividing the total amount of securities, or the amount for any class, by the number of miles of road owned. If, however, capitalization is to be compared with the miles of road *operated*, the basis most commonly employed, it is necessary to make allowance for the leased railroad mileage, which is operated by so many of the larger systems.[17] The customary method of making an adjustment for the investment in this rented property is to capitalize the rentals paid for its use at the arbitrary rate of 5 per cent and to include the result, rather than to attempt to include the bonds and stocks of the leased lines Total capitalization of a road, then, for comparative purposes, will include bonds and stock outstanding and net rentals capitalized at 5 per cent

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[17] Likewise, an adjustment should be made for nontransportation assets where these are relatively important, and investment in such assets should be deducted from capitalization.

The reduction of total capitalization to a per mile basis is desirable for purposes of comparing the capital structures of various roads When such comparisons are made, however, it must be recalled that a great many other factors are to be considered at the same time The traffic density of the roads under scrutiny, the character of the traffic hauled, and the nature of the territory through which the roads run are all matters of vital importance and may explain wide differences in per mile capitalization figures of various roads A total per mile capitalization of $60,000 to $75,000 may be high for roads operating in the Northwest, where traffic density is light and construction costs are far lower than in the densely populated area east of Chicago On the other hand, a total capitalization per mile of $200,000 may not be excessive for such roads as the New York Central or the Pennsylvania, which enjoy great passenger and freight density and which operate through thickly populated areas where land values are very high

Most roads in trunk-line territory, which extends from Chicago to the Atlantic Coast, will run from $150,000 to $250,000 per mile of road In western territory, per mile capitalization will normally average between $40,000 and $75,000 per mile The net capitalization of all roads in the country, including switching and terminal companies, in 1948 amounted to $16,004,298,000, which was equivalent to $71,323 per mile of road In this figure surplus was not considered Total investment for Class I railroads alone was recorded at $131,845 per mile of road at this time Substantially three fourths of this amount represented "road," or tracks, yards, buildings, shops, and the like, while one fourth was equipment, or "rolling stock" Per mile capitalization data are not significant by themselves A road can support a heavy capitalization where traffic density is likewise heavy and traffic is profitable The Chicago, Milwaukee & St Paul was unable to support a capitalization of $60,000 a mile at a time when the New York Central was able to support a capitalization of $190,000 per mile

**Current liabilities.** The next item under liabilities, "Current Liabilities," includes the various items that one would normally expect there "Traffic and Car-Service Balances Payable" and

"Audited Accounts and Wages Payable" include, for the most part, payroll accruals and accounts payable arising out of railroad operation The Tax Liability represents accrued liability for various taxes, chiefly income taxes to the federal government The other items, except "Miscellaneous Accounts Payable," include accruals on funded and unfunded debt and rents accrued When earning power is low, the presence of "Loans Payable," representing, as a rule, bank loans, is regarded as a possible sign of weakness

**Other items.** Under "Unadjusted Credits" appear various minor items of a liability nature Some, like the reserves for damages, are estimated liabilities Tax liability was formerly carried here Accrued depreciation was also placed here but is now more properly deducted from the asset, except for the Accrued Depreciation on Leased Lines Property, which the analyst will also treat as an asset deduction in arriving at net transportation property

The Surplus account is divided into two parts the appropriated Surplus and the unappropriated Profit and Loss balance The common reasons for "appropriation" are shown in the Pennsylvania Railroad's balance sheet. additions to property investment, retirements of funded debt, either voluntary or because of stipulated sinking funds, and for other purposes, such as the acquisition of securities of affiliated companies In most other fields, no attempt is made to indicate the purpose for which earnings have been retained in the business It is apparent that even here the distinction is of doubtful significance, since little of the unappropriated surplus has been left in the form of free cash available for dividends but has been put to various uses, either additions to operating assets or investments or the reduction of debt

**Analysis of railroad bonds.** After studying all the factors relative to the financial operations of the road and its profit-making possibilities, the investor must further determine the status of the particular bond under consideration in relation to other securities of the road If all the credit obligations of a road were in two or three categories, representing first, second, and third liens against all its properties, the matter of determining the status of each issue of bonds would be relatively simple However, the financial structures of most railroads have been built up over a period of years through the acquisition of a division here and a division there Part of a road may have been built by affiliated construction companies, part acquired through a merger, part by a lease arrangement, and part by the purchase of the stocks or the actual assets of other corporations The funded debt of the parent company, therefore, comprises an intricate mass of underlying, junior, and debenture bonds, secured by various mortgages on specific trackage or by a general unsecured claim against the entire system While it is possible to reduce the total aggregate burden of these obligations to a per mile basis, such a figure is more important as a test of the road's general credit than that of any particular issue of bonds, unless it happens to be the weakest debenture or junior lien

It is also true that the total burden of these obligations in respect to earning power, usually measured as the number of times the combined fixed charges (interest plus rentals) have been earned, is valuable when the road's position as a going concern is tested, although such an analysis fails to indicate in any way the priority in claim going with an individual issue of bonds, or the advantages that any particular issue would enjoy in case of foreclosure Such information is available only through a study of the specific units of road pledged under a given mortgage and the relative value of such sections to the road in question[18] Underlying, or first mortgage, bonds on important sections of the road —that is, on sections over which traffic density is sufficient to return an excess of income over fixed charges—are better secured than underlying mortgage bonds on sections where the traffic density is light and earnings fail to equal charges In the event of receivership, unquestionably the holders of the first issue of bonds would be well taken care of, while the holders of the second issue might fare no better than the unsecured creditors of the road[19] The obvious conclusion is that a bond, unless it is the obligation of a road whose general credit is high, should be secured by asset values substantially in excess of the amount of bonds outstanding, and by earnings substantially in excess of charges The bond cannot be considered of investment quality unless earnings average at least two times interest requirements

When a railroad goes into trusteeship or receivership, a principal aim is to cut down fixed charges Consequently, they look over the railroad properties and compare earnings on different sections of the road with the expenses, including charges, that properly belong to each section. They may find one section with only a small first mortgage outstanding, where interest charges are earned four or five times. On another section there may be two or three bond issues outstanding, while earnings are insufficient to equal the charges even on the underlying securities. First, or even junior, mortgage bonds of the first section might easily be left undisturbed, whereas the holders of the bonds covering the second section would be required to make sacrifices. If the bondholders did not wish to accept the terms offered by the reorganization committees, the most they could do would be to foreclose. If the section had not been profitable prior to default, such action is likely to bring no relief. As a practical matter, a plan is ordinarily offered under which the bondholders do better by accepting the terms offered than by foreclosing, for a section that is unable to earn charges when operating with the whole unit as a going concern is less likely to earn charges when operated independently. (The right to foreclose is actually limited by the power of the court under the present bankruptcy law, Section 77, to confirm a plan that it finds fair and equitable even if it is not accepted by two thirds of each class of creditors affected.)

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[18] Such a discussion of the mortgage security in the complex New York Central system with its low fixed charge coverage may be found in Davis, Wm H, "West Shore 4's Discount Value in Central's System," *Barron's*, Feb 9, 1948, p 32 Another case study of the Morris & Essex First Refunding lien as of 1937 is given in Downie, G W, and Fuller, D R, *Investments* (New York John Wiley & Sons, Inc, 2nd ed, 1950), pp 419–432

[19] In order to distinguish the position of the liens of the various bond issues, special maps of the various systems are published by White and Kemble (New York), which show graphically the priority and mileage of each bond issue The mortgage maps of H H Copeland and Son (New York) show the traffic density on the various sections of mileage, an especially useful feature in judging the smaller divisional liens

Debt simplification ordinarily results from reorganization. A common pattern is to exchange the various bond issues into two simple bond issues—a first mortgage paying fixed interest and a second, or general, mortgage paying contingent interest—and preferred and common stock. Any equipment trust obligations are typically left undisturbed.

When a railroad's financial condition is such that some doubt as to its ability to refund exists, close attention will be given to bond issues maturing in the proximate future. Inability to pay may precipitate a reorganization.[20]

The simplest method of showing the generally impaired position of railroad bonds, particularly junior liens, as a result of reduced earnings is to show the relation of the amount of earnings available to the fixed charges in recent years. The following table shows these figures for the period 1921–1949.

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[20] During the 1930's this hazard and sometimes even unearned fixed charges and taxes were cared for by loans from the Reconstruction Finance Corporation and the Public Works Administration. At the end of 1949 only $112 million out of a total of $1,139 million disbursed by these agencies as loans, or about 10 per cent, remained unpaid.

### EARNINGS, FIXED CHARGES, AND TIMES EARNED FOR CLASS I RAILROADS 1921–1949*

(Millions of Dollars)

| *Year* | *Net Railway Oper Income* | *Gross Income* | *Fixed Charges†* | *Net Income* | *Times Fixed Charges Earned‡* | *Return on Net Property Investment* |
|---|---|---|---|---|---|---|
| 1921 | 601 | 976 | 662 | 314 | 1.47 | 2.99 |
| 1922 | 760 | 1,025 | 656 | 370 | 1.56 | 3.75 |
| 1923 | 962 | 1,223 | 667 | 555 | 1.83 | 4.57 |
| 1924 | 971 | 1,213 | 685 | 558 | 1.82 | 4.49 |
| 1925 | 1,112 | 1,389 | 688 | 701 | 2.02 | 5.07 |
| 1926 | 1,213 | 1,511 | 679 | 809 | 2.16 | 5.35 |
| 1927 | 1,068 | 1,379 | 686 | 673 | 1.98 | 4.64 |
| 1928 | 1,173 | 1,493 | 683 | 787 | 2.15 | 5.01 |
| 1929 | 1,252 | 1,611 | 693 | 897 | 2.24 | 5.24 |
| 1930 | 869 | 1,228 | 683 | 524 | 1.77 | 3.59 |
| 1931 | 526 | 830 | 672 | 135 | 1.20 | 2.20 |
| 1932 | 326 | 551 | 666 | *139 def* | .79 | 1.38 |
| 1933 | 474 | 686 | 678 | *6 def* | .99 | 2.03 |
| 1934 | 463 | 666 | 665 | *17 def* | .98 | 1.98 |
| 1935 | 500 | 688 | 648 | 8 | 1.03 | 2.15 |
| 1936 | 667 | 852 | 653 | 165 | 1.27 | 2.87 |
| 1937 | 590 | 765 | 629 | 98 | 1.18 | 2.54 |
| 1938 | 373 | 528 | 614 | *123 def* | .82 | 1.61 |
| 1939 | 589 | 750 | 608 | 93 | 1.19 | 2.55 |
| 1940 | 682 | 851 | 609 | 189 | 1.35 | 2.93 |
| 1941 | 998 | 1,175 | 620 | 500 | 1.83 | 4.28 |
| 1942 | 1,485 | 1,667 | 659 | 937 | 2.46 | 6.30 |
| 1943 | 1,360 | 1,561 | 597 | 901 | 2.55 | 5.71 |
| 1944 | 1,106 | 1,318 | 566 | 684 | 2.25 | 4.71 |
| 1945 | 852 | 1,057 | 523 | 475 | 1.95 | 3.77 |
| 1946 | 620 | 830 | 471 | 304 | 1.69 | 2.75 |
| 1947 | 781 | 1,010 | 437 | 501 | 2.21 | 3.41 |
| 1948 | 1,002 | 1,237 | 425 | 715 | 2.76 | 4.24 |
| 1949 | 686 | 941 | 414§ | 438 | 2.27§ | 2.86 |

* Compiled from reports of the Interstate Commerce Commission.

† Includes interest on funded and unfunded debt, amortization of discount, rent of leased roads. Excludes income bond interest after 1935.

‡ Minor deductions subtracted from Gross Income before calculation of Fixed Charge coverage.

§ Estimated.

Individual roads vary considerably from any average. Thus, in 1932–1934 some roads showed a satisfactory coverage of charges, while others passed into receivership, and still others were saved from that fate by loans from the Reconstruction Finance Corporation and other sources.

Certain points are worth noting about railroad earnings and their relation to the investment position of the debt they support.

as portrayed in the table (Also see Figure 15 showing gross revenues and net railway operating income ) (1) Even during the decade of the 1920's when the number of automobiles and trucks was rising most rapidly, the railroads were making progress in fixed charge coverage The rise in average coverage to better than a two times earned was partly the result of keeping total fixed charges fairly constant in spite of some debt increase, and partly improvement in net as compared with gross revenues (2) The depression of the 1930's struck railroad earnings severely In four of the ten years there was a deficit after fixed charges Nevertheless, earnings were present in every one of the years in two they almost equalled and in the two others they were about four fifths of fixed charges Such earnings were made possible by a remarkable control of the operating ratio during a period of declining revenues (See table on page 379 ) (3) A major reduction of fixed charges has taken place since the mid-1930's The largest influences were (a) a devotion of the major part of war earnings to debt reduction, and (b) completion of reorganization during the 1940's for most of those roads that had failed in the 1930's At the end of 1939, 39 Class I railroads, operating 75,114 miles, or 32 per cent, of all Class I mileage were in receivership or trusteeship [21] A decade later the Missouri Pacific was the only very large road still in the process of reorganization Fixed charges were cut by requiring bondholders to accept junior securities The extent of the reduction in fixed charges from debt reduction and other factors can be best seen by comparing the figures for Class I roads in 1929 and 1948

| *(Millions of Dollars)* | *1929* | *1948* | *Change* |
|---|---|---|---|
| Interest on debt (including debt discount) | 503 | 294 | −209 |
| Rents for leased roads and equipment | 177 | 131 | − 46 |
| Total fixed charges | 680 | 425 | −255 |
| Contingent interest on funded debt | 12 | 32 | + 20 |
| Total charges | 692 | 457 | −235 |

Two minor factors reducing fixed charges were a refunding of some debt by the stronger roads at lower interest rates and the financing of most new equipment with very low-rate equipment obligations while cash was being used to buy in higher yielding bonds in the market The railroads have been retiring contingent interest income bonds as well as fixed interest bonds The contingent interest adds so little to the total debt that combined coverage for it and fixed charges was 2.56 times earned in 1948—not much below the 2.76 figure for fixed charge coverage alone.

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[21] Bureau of Railway Economics, *A Review of Railway Operations in 1939* (Washington, D C Association of American Railroads, 1940), p 14

The increase in the proportion of serial equipment debt might appear a weakening factor by creating a fixed annual burden of near-term maturities much greater than the interest differential for long-term debt of the stronger roads. Typically, however, the annual maturities are much lower than the depreciation allowances, so that as long as a road covers its fixed charges, it can use "depreciation money" for debt retirement by failing to use it for replacements in depression years. The large use of equipment obligations is part of an over-all plan of determined debt reduction.

Another safety measure has been the accumulation of cash and temporary investments by many roads during the 1940's. Such a resource would care for unearned interest and moderate debt maturities should depression cause earnings to fall short of debt charges. Many roads have set up as a minimum objective, the reduction of fixed charges to a level where they would be earned under the worst conditions of the past.

Two further points are worth keeping in mind in the reading of the table on earnings and coverage. Some roads that pay substantial fixed charges in the form of rentals for the use of the property of other railroads—the Pennsylvania is the best example—have bought up the securities of these leased roads. Thus, in 1948 the Pennsylvania paid $47 million for such lease rentals but received back $32 million in the form of dividends and interest on the securities of these roads. Such intra-system payments should be eliminated in the calculation of fixed charge coverage, since the company merely pays itself. The elimination of the Pennsylvania payments of $32 million alone from the income and fixed charges for 1948 (on page 42) would have raised the coverage figure from 2.76 to 2.90.

The other item affecting the interpretation of the long-run record is the large increase in the level of corporation income taxes since the 1920's and early 1930's. This tax is subtracted before the calculation of the fixed charge coverage. Its increase means a larger cushion than formerly of income *after* the charges, which is not reflected in the coverage figure. This additional cushion may, however, be counterbalanced by such adverse factors as higher operating ratios and loss of the more stable consumers' goods traffic, both of which make net income more unstable.

The movement of railroad earnings can be best seen in the rate of return earned on the net property investment in the last column (The net railway operating income divided by the book investment in road and equipment less depreciation plus a minor amount of working capital ) The average return for the ten years 1921–1930 of 4 47 per cent was cut in half by depression to 2 22 for 1931–1940 The war raised earnings to a 4 95 per cent return (1941–1945) which fell back to a 3 47 per cent level afterwards (1946–1948)

**Preferred stocks.** The preferred stocks of railroad companies vary more in character than the preferred stocks of utilities. When dividends on the preferred stock issue are guaranteed, as happens where a subsidiary company is leased by the parent company, a railroad preferred stock is secure in proportion as underlying assets and earnings exceed the amount of stock outstanding and dividend requirements Sometimes this support may be weaker than the general credit of the guaranteeing company, in which case the latter factor will determine the standing of the issue A number of railroad preferred issues have arisen in reorganization and are noncumulative. The most common measure of the investment quality of preferred stocks, other than guaranteed issues, is the number of times the combined fixed charges and preferred dividends have been earned Because a considerable funded debt almost invariably precedes the dividend claim, preferred stocks require careful study Much of the same sort of analysis of the past statistical and financial record and estimate of future prospects that is so necessary in the selection of common stocks because of the risk factor is essential in this division of securities

**Common stocks.** Railroad common stocks will sell at prices that reflect current per share earnings, current dividend rates, and future prospects The future possibilities of a railroad can be estimated only by careful study along the lines already suggested While it is impossible to state the relation that should obtain between the market price of a given railroad stock and its per share earnings, the data in the following table for both dividend and non-dividend paying stocks of a group of thirty-one leading railroads show certain general tendencies that have obtained in the past[22]

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[22] Guthmann, H G , "Railroad Security Yields to Investors 1924, 1926, and 1928," *Journal of Land and Public Utility Economics*, August, 1931, p 260 A study in the *Wall Street Journal*, October 21, 1925, reported the following average percentages earned on market price for twenty railroads

| | |
|---|---|
| 1923 | 14 40% |
| 1924 | 10 91 |
| 1925 | 10 76 |

RATE EARNED ON AVERAGE MARKET PRICE OF
COMMON STOCKS OF LEADING RAILROADS
(Medians)

| *Year* | *All* | *Dividend Paying* | *Nondividend Paying* |
|---|---|---|---|
| 1924 . | 13 4% | 12 0% | 17 3% |
| 1926 | 13 1 | 12 6 | 13 7 |
| 1928 | 9 2 | 9 1 | 10 2 |

The figures show that, following the discouraging record during and immediately after World War I, prices of rail stocks were very low in relation to earnings in 1924 As pessimism gradually waned, rail stocks rose to a more normal relation with earnings Dividend yields showed a similar decline—from 6 35 per cent in 1924, to 5 79 per cent in 1926, and 4 87 per cent in 1928 [23] The variation of these percentages among the different railroads was considerable

After 1930 earnings fell so low, frequently deficits occurring, and dividends were omitted so often that the calculation of these percentages lost their significance [24] In the absence of earnings, stock prices became extremely speculative valuations of the discounted future earnings In any case, price cannot be related to a negative or zero earnings figure As earnings recovered in the early 1940's during World War II, some railroads resumed dividend payments The average (median) and extreme dividend yields and corresponding rates of return earned on average market price for each year are shown in the following table based on thirteen large roads, all of which had resumed dividends by 1943 [25]

| | *Dividend Yields* | | | *Rate Earned on Market Price* | | |
|---|---|---|---|---|---|---|
| | *Median* | *High* | *Low* | *Median* | *High* | *Low* |
| 1944 | 7 44 | 10 02 | 4 98 | 19 26 | 54 08 | 7 55 |
| 1945 | 5 71 | 6 47 | 3 56 | 10 21 | 22 93 | 4 03 |
| 1946 | 5 74 | 7 39 | 3 82 | 8 55 | 14 51 | —1 79 |
| 1947 | 7 26 | 9 70 | 2 36 | 15 96 | 29 69 | 2 60 |
| 1948 | 7 76 | 11 71 | 4 56 | 19 40 | 31 93 | 9 74 |
| 1949 | 9 68 | 12 10 | 4 76 | 12 61 | 25 35 | 4 40 |

The high rates are reminiscent of the similar high level during the early 1920's after World War I They result from the same fear that the revival of earnings and dividends would be only temporary and might decline after a postwar boom The actual course of events will only appear with time The investor will give special attention to certain factors for clues as to the direction of movement

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[23] *Ibid*, p 259

[24] For example, some of the well-known railroad dividend yield series included a majority of nondividend-paying stocks in some years The result is a very low reported yield figure at a time when high rates were obtainable on such stocks as did pay dividends

[25] Compiled by the authors

1 *Traffic* Because of its importance freight traffic will be most closely watched Ton-miles of traffic will be compared with indexes of industrial production to see whether the railroads' position is becoming stabilized or further losses to other modes of transport are taking place[26] From the general rail picture, the study would proceed to the traffic of the individual road, some showing more strength than others The temporary influence of factors such as strikes and unusual weather conditions must be discounted The trend from coal, a basic traffic commodity, to natural gas and petroleum is an unfavorable factor[27] Decentralization of industry has also been listed as unfavorable because it might move individual plants closer to markets Migration of plants to areas of low production costs, such as the southern states and smaller communities, might, however, create more and longer hauls to the major consuming areas

2 *Rates* Traffic volume multiplied by rates gives the railroad's gross revenues The failure of rates to keep pace with a rising price level and the mounting cost of fuel and wages has been regarded as most unfavorable Nevertheless, by making freight charges cheaper as a real cost, the result should be to make it easier for the community to buy more freight service for a given effort The same factor has spurred management to greater efforts to economize, which should have valuable long-run results

Undoubtedly price level changes are the most important factor making rate changes necessary During a period of rising prices, the roads are squeezed between rising costs and rate increases that rise too slowly under commission regulation When prices decline, any gains from cost reductions are often more than swallowed up by traffic losses that go with a falling price level

3 *Costs and efficiency* The achievements of railroad management are suggested by figures given earlier that show how successful the roads have been in keeping down the per ton-mile cost of freight service To a considerable extent, the ability of the rail-

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[26] Interstate Commerce Commission, *Fluctuations in Railway Freight Traffic compared with Production, Class I Steam Railways, 1928–1944* (1946) The comparison is faulty because freight traffic rests on other things besides industrial production

[27] For the soft coal consumption picture, see Abrams, Ernest R, "Coal Contributes to Consumer Savings," *Barron's*, April 18, 1949, p 13 For the use of natural gas and the importance of coal traffic for some leading roads, see Halperin, Max, "Natural Gas Competing for Coal Carriers' Markets" *Barron's*, October 24, 1949, p 14

roads to control costs will determine their ability to hold marginal traffic, which could keep operations from showing a reasonable financial return if it went to competing forms of transportation The record since 1920 is hopeful A thumbnail sketch of some of the forces at work is seen in the following figures [28]

| | *1920* | *1940* | *1949* |
|---|---|---|---|
| Average tractive effort of locomotives (thousands lbs ) | | | |
| Steam | 36,365 | 50,905 | 56,333 |
| Diesel | — | 55,130 | 56,714 |
| Average freight car capacity (tons) | 42 4 | 50 0 | 52 4 |
| Net tons carried per loaded freight car | 29 3 | 27 6 | 31 4 |
| Cars per freight train | 35 6 | 49 7 | 56 8 |
| Miles per locomotive per day | 89 | 107 | 113 |
| Net ton-miles per freight-train hour | 7,303 | 14,028 | 19,023 |

The most expensive capital item required to finance these improvements in operating efficiency has been new equipment The unrivaled investment record of equipment obligations has enabled even roads with poor credit to finance this need Probably the most important single influence upon costs in recent years has been the rise of the Diesel locomotive Originally adopted for switching and then main-line passenger service, the Diesel was first used for freight in 1941 A substantial investment has been taking place since Fuel economy, ability to pull heavy loads, and ability to stay on the rails for long periods without returning to the shops for maintenance have given it a rapidly mounting popularity [29]

One cost should receive particular attention, namely taxes The railroads have contributed heavily to Federal, state, and local tax revenues One of the anomalies and problems of the railroad is the contrasting treatment afforded competitive rivals, especially air transport, trucks, and waterways Subsidies and preferential treatment are given these competitors. Automobile and trucking interest utter outraged cries if gasoline taxes are used for other than highway purposes In contrast, the railroads have not only had to supply their own capital to build their own highways in the form of roadbed and rails but are expected to pay property taxes on that investment and income taxes out of the earnings needed to pay a return on that investment All such taxes on the railroads are devoted to general governmental purposes The railroads are also expected to "invest" in such items as grade crossing removals which add nothing to earning power but are designed to meet safety problems created by the automobile

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[28] *Railroad Transportation 1911–1949* (Washington, D C Association of American Railroads, Bureau of Railway Economics, 1950)

[29] Jansen, Arthur, "Rail Earnings Protected by Diesels," *Barron's*, May 23, 1948, p 9 For an exceptional record, see Jansen, Arthur, "Norfolk & Western Eschews Diesels," *Barron's*, Feb 7, 1949, p 40 Berge, Stanley and Loftus, Donald L , *Diesel Motor Trains* (An economic evaluation ) (Chicago Northwestern University School of Commerce, 1949)

An indication of Diesel fuel economy is furnished by a statement of the Electro-Motive division of General Motors that the 6,000 oil-burning steam locomotives used 265,000 barrels (of 42 gallons each) of heavy fuel oil per day and performed 18 per cent of the railroad's locomotive work in 1947, the 5,000 Diesel locomotives consumed only 52,000 barrels per day and did 19 per cent of the work Thus, if all locomotive work were done by Diesels they should use less fuel than the present oil burning steam locomotives alone *Chicago Daily News*, Sept 27, 1948

Such differential treatment of the several agencies of transportation is serious from the point of view of national economic policy[30] Levies that inflate the costs of the railroads while subsidy understates the costs of its rivals prevent the achievement of lowest cost transport The evil is compounded because diversion of marginal traffic from the rails to higher cost carriers multiplies the burden upon the remaining users of railroad service who are compelled to continue by force of circumstances The retention of traffic would permit lower rates for all because of the high fixed costs of railroading

Clearly an alert and aggressive policy on the part of railroad management is required to meet the problem of restoring the investment credit of the industry The problem is one of meeting political handicaps and at the same time striving for ever-increasing operating efficiency The improvements in the efficiency of rival carriers will make the job a continuing one

**Summary** In this chapter it has been possible to give only a limited treatment of investment analysis as applied to railroad securities This subject is one of the most complex branches of investment Acquaintance with the more important bases of comparison have been touched upon, and will undoubtedly help the beginner Yet when it is recalled that there are 133 Class I roads in this country and the number of different securities outstanding runs well into the thousands, the complexity of the field is evident Furthermore, statistical comparisons, while they have their place in railroad analysis, do not tell the whole story Not until a complete survey has been made of the territory through which a road runs, in respect to physical characteristics, industries, resources, terminals, and relations with connecting roads, in addition to a statistical study of its performances over a period of years, can the investor be said to have familiarized himself with the real investment merits of a road's securities Mastery of the field can be expected only after long study and constant attention to detail

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[30] Dearing, Charles L , and Owen, Wilfred, *National Transportation Policy* (Washington D C Brooking Institution, 1949)

# 15

# Financial Institutions—Banks and Insurance Companies

**Common characteristics of financial institutions** We shall consider in the present chapter the securities of certain selected types of financial institutions banks, life insurance companies, and fire and casualty insurance companies These four types of institutions have at least one common characteristic their essential business is that of investing This statement applies even though the business of banking, especially as conducted by the average commercial bank, has been extended to include the furnishing of collateral services, such as the administration of estates, the providing of trustee services, and the operation of safe-deposit vaults Formerly some of the leading commercial banks conducted an investment banking business through subsidiary or affiliated companies but now they are permitted to deal only in Government and municipal securities Insurance companies likewise have sources of revenue other than from investments namely, revenues derived from an excess of premiums over losses paid In neither instance, however, can the income from sources other than investments be said to constitute a major portion of total net earnings Investment trusts, which will be described in the following chapter, are also essentially investment undertakings, their sole revenue being derived from investments either in the form of dividends and interest received from the securities they hold or in the form of profit from the purchase and sale of securities Despite the similarity found in these various types of undertakings, there are, however, sufficient points of difference to warrant a separate discussion of the investment characteristics of each type Consideration will first be given to bank stocks

## Bank Stocks[1]

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[1] For further discussion of bank statement analysis, see Garcia, F L , *How to*

The first point to be emphasized in a discussion of the securities of banks is that only one type of security is generally found in their capital structure namely, common stock As a temporary emergency measure, the Federal Government found it desirable to provide capital funds during the banking crisis of 1933 to banks that were deemed solvent but were suffering through an inadequate net worth To provide an instrument subordinate to the position of the depositor but prior in claim to that of the ordinary stockholder, preferred stock and, in some cases, income debentures were created for subscription by the Reconstruction Finance Corporation Most of this preferred was subsequently retired from earnings A few banks have used preferred as a means of financing growth or as an incident of merger

**Double liability of bank stocks.** The stocks of banks have in the past almost invariably carried double liability That is, when a bank became involved in financial difficulties, the persons in whose name the stock was registered were liable for an assessment equal to the par value of their stock, in addition to the ordinary liability of any unpaid assessments on the original subscription price. The special liability applied not only to all national banks, chartered by the United States, but to many state banks as well, and arose from the feeling that because of the fiduciary relationship that banks bear to their depositors special protection was desirable The measure proved to be notoriously ineffective, and the Banking Act of 1933 abolished double liability for stock of national banks issued subsequent to the passage of that act In 1935 legislation was passed providing for the termination of this feature for the remaining stock of all national banks after July 1, 1937, contingent upon the publication by the individual bank of six-months' notice of the change

Where this feature continues to exist as for the stocks of some state-chartered banks, the possible risk of loss from double liability should be considered The relative risk diminishes as the market price or investment value rises relative to par value In the case of the stock with a par value of but $10 which was selling for $90, the stockholders would bear an additional risk of but $10, or one ninth of the investment, in each share from the double liability

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*Analyze a Bank Statement* (Cambridge, Mass Bankers Publishing Co, 1947), and Schapiro, M A, "Factors in Bank Stock Appraisal Position of New York Banks," *Commercial and Financial Chronicle*, 168 1966 (November 11, 1948), for illustrative statistical material, see the annual studies of Blyth & Co, Inc, *Banks and Bank Shares* covering the stocks of leading banks factor Because banks typically expand from retained earnings, this high value per share relative to par is quite common The other factor bearing on this risk is the general one of bank failure, which depends upon the quality of the individual bank's assets. Since the wholesale weeding out of weak banks after the Bank Moratorium and the creation of the Federal Deposit Insurance Corporation, bank failures have been very few

**The commercial banking business.** A complete understanding of the investment value of bank stocks depends to some extent on a knowledge of the banking business We refer here to the business of *commercial* banking, because this is the only type of banking business conducted on a large scale under the corporate form of organization Most of the large *investment* banking houses are partnerships, whereas many *savings* banks, particularly in the New England and the Middle Atlantic States, are mutual Stock savings banks are relatively unimportant The business of a mutual savings bank is run by a board of trustees, solely in the interest of its depositors, and pays a rate of interest (technically a dividend) dependent upon the earnings, which are derived almost entirely from first mortgages and bonds, rather than from commercial loans Many commercial banks and trust companies have expanded their savings, or time-deposit, business in recent years Indeed, most of the deposit growth of national banks between 1920 and 1930 was in that field, time deposits rose from $3,485,000,000 in 1920 to $8,753,000,000 in 1930, as compared with an increase in demand deposits from $13,670,000,000 to $14,516,000,000 during the same period. The mutual savings banks, which exist in only 17 states, are much more closely regulated as to investments than the commercial banks and have had almost no failures even during the trying depression of the 1930's

The commercial bank, whether it be a national bank, a trust company, or a state bank, occupies a position of strategic economic importance in the business community it serves In addition to receiving deposits, it makes loans to businessmen on short-term notes, either secured or unsecured For notes discounted by corporations, partnerships, or individuals who are engaged in a reputable business, the proceeds of which are to be used for strictly business purposes, no security is required other than the customer's signature on the note For loans made for other than business or commercial purposes, additional security is ordinarily required in the form of either indorsements or collateral Accordingly, one finds two items listed under the resources of most banks unsecured, or commercial, loans, and loans secured by a pledge of collateral

We shall not enter here into an exhaustive analysis of the theory of banking, for this ought to be reasonably familiar to the average student of economics While the lending capacity of the banking *system* depends at any given time upon the amount of cash reserves, the *individual* bank is limited by the amount of funds supplied by its stockholders and depositors [2] To the extent that deposits can be obtained from the community and loaned so as to earn more than the cost of services to the depositor, the return upon the stockholders' investment will be enhanced Reserves, in the banking sense, consist of the asset cash, which is available to meet withdrawals and which represents amounts from which no investment return can ordinarily be expected Even in the investment of the remaining funds of the bank, a policy that sacrifices yield to safety and liquidity is expected In studying the balance sheet of the bank, the investor will look for assets that may be readily disposed of on short notice to meet deposit withdrawals Conservative banking practice requires that certain "secondary" reserves of liquid investments be maintained by the bank in proportion to demand liabilities, as well as the cash reserves required by law

**Deposits and risk assets to net worth.** In addition to maintaining adequate actual cash or legal reserves in order that it may be able to meet its deposit liabilities and thus avoid temporary embarrassment, the bank should have sufficient capital and surplus to safeguard its creditors against undue shrinkage in its assets That is, a bank with a capital and surplus of only $150,000 could hardly be expected to carry deposits of $50,000,000 on its books Under such conditions, a very small shrinkage in the book value of its assets would wipe out the entire investment of the stockholders and threaten loss to the depositors of the bank or to other creditors It is the presence of an adequate capital and surplus, therefore, that protects the depositors and the creditors of a bank in the same way that the common stock and the surplus of a manufacturing or public utility company protect the bondholders, or other creditors In the case of banks, however, it is not necessary that the combined capital and surplus should bear anywhere nearly so high a ratio to liabilities as in the case of many corporations, on account of the relatively low element of business risk involved in the operation of a bank, if it confines itself to high-grade liquid commitments.

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[2] For the solution of this generalization—"the riddle of banking"—the student is referred to Bradford, Frederick A, *Money and Banking* (New York Longmans, Green & Co, 6th ed, 1949), pp 405–420

During the 1920's a common rule-of-thumb was that a commercial bank should have a net worth equal to at least a sixth of its deposit liabilities, or a maximum deposit to net worth ratio of six. Reference to the following table shows this figure was not far from the average for national banks in 1930. Subsequently during the 1930's and the war years the ratio rose rapidly to 9.5 in 1940 and 17.2 in 1945. During the depression of the early 1930's which wiped out many banks, capital suffered from heavy losses. As deposits rose again, capital was restored but slowly. During the war years rapid deposit expansion growing out of "monetization of the Government debt" (deposit expansion based on Government deficit financing) took place.

RATIOS OF DEPOSITS TO NET WORTH FOR ALL NATIONAL BANKS AS OF JUNE 30*

(Millions of Dollars)

| *Net Worth* | *1930* | *1940* | *1945* | *1948* |
|---|---|---|---|---|
| Capital stock | 1,744 | 1,535† | 1,624 | 1,805 |
| Surplus | 1,591 | 1,250 | 1,875 | 2,451 |
| Undivided profits | 546 | 468 | 692 | 971 |
| Reserve for contingencies, etc. | — | 224 | 281 | 318 |
| Total | 3,881 | 3,477 | 4,472 | 5,545 |
| Total deposits | 23,269 | 33,074 | 76,826 | 79,000 |
| Ratios of deposits to net worth | 6.00 | 9.51 | 17.18 | 14.25 |
| Number of banks | 7,252 | 5,170 | 5,021 | 5,004 |

* Compiled from *Annual Reports of the Comptroller of Currency*.
† Includes preferred stock.

This revolution in the ratio has caused a reexamination of the rule. The economic function of the cushion of stockholders' investment is to absorb risk of loss from assets supporting the deposit liabilities. As the proportion of assets in the form of cash, mostly deposits with the Federal Reserve banks, and short-term Government obligations increases, the hazard of loss decreases. For this reason, many careful students of banking prefer to use the ratio of "risk assets" rather than that of deposits to the stockholders' investment. The term "risk assets" includes the assets other than cash and Governments, chiefly Loans and Discounts and some non-Government bonds. This risk ratio ran as follows for national banks:

| *1930* | *1940* | *1945* | *1948* |
|---|---|---|---|
| 5.11 | 4.00 | 3.79 | 5.17 |

In examining this relationship for individual banks, it should be recognized that its significance varies with the quality of the so-called "risk assets"

**Measuring the prosperity of banks.** Let us consider next the relationship that a well-established bank bears to the business community it serves Performing, as it does, a necessary service, it is entirely logical that its total business should grow at the same rate as the business of the community develops Note that we suggest a comparison, not with the increase in population, but with the growth in business transactions in a community Even though it is possible that the growth in population and business may be proportional, such a relation is by no means always true Business development of a community may expand at a faster or a slower rate than the growth in population When we analyze bank stocks, our interest centers primarily on the increase in the aggregate business of a community, rather than on the rate at which population increases Owing to the nature of the banking business, it is inevitable that banks that are located in communities whose commercial activities are basic and increasing should offer excellent investment opportunities, since their volume of business ought to increase at least at fast as that of the community

Such increases in the volume of business are usually made possible when the bank transfers a part of its profits each year to its surplus account, instead of paying all of them out as dividends Such accretions to surplus give the bank the necessary funds on which to expand They provide additional funds for investment, the basis for safely accepting increased deposits, and permit the bank to offer a larger credit limit to borrowing customers Surplus, reinvested in this way, may be said to "compound" in the interest of the common stockholder Where the business of the bank increases at so rapid a rate that it cannot be financed out of surplus accretions, new stock is issued to the present stockholders at prices below the current market price, thus creating valuable subscription rights

**Book value and market value** Very often bank shares, particularly of large banks, have sold for more than their book value per share (that is, capital stock, surplus, undivided profits, and any surplus reserves divided by the number of outstanding shares) A closer relationship between market value and book value would be expected in the field of commercial banking than in many other fields, because the bulk of the supporting assets consists of cash and credit instruments payable in dollars. A balance sheet with such assets should reflect current values much more closely than, say, an industrial balance sheet showing real estate, equipment, and inventories of variable value However, in times of extreme depression, bonds and loans may suffer badly, and if they are not written down promptly, the balance sheet will overstate values On the other hand, strong, over-conservative banks may understate assets somewhat by writing down defaulted loans to less than their rerecovery value, depreciating the usually small real estate items excessively, and setting up profits from the sale of bonds as a reserve for future losses [3] The last item would not be misleading if it were distinctly shown in the balance sheet as a reserve, but the bank may treat it as a valuation reserve and show its investment account at the net figure without mentioning the deduction Furthermore, because a commercial bank must be able to liquidate assets at all times in order to meet deposit withdrawals, accounting usage favors the carrying of bond investments like an inventory, at the lower of cost or market value Consequently, after a period of rising bond prices, the balance sheet figure will fail to disclose the unrealized profit on bonds purchased at lower market levels Since 1938, member banks of the Federal Reserve system have been permitted to carry bonds of investment quality at cost even though market is lower, so that balance sheets can also overstate liquidation value

In the past, perhaps because of the liquidity and the relatively fixed value of most bank assets, it was usual to expect that a bank stock would sell above its book value While the stocks of large banks may not be representative of the whole field, it is of interest to note that over a 26-year period ending with 1930, the stocks of leading New York banks sold on the average of 1¾ times book value, as shown in the accompanying table [4] Prior to 1925, these stocks, as a group, at no time sold for more than twice book value, and did not fluctuate greatly from a ratio of about 1¼ times book

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[3] Beginning after December 31, 1946, the Commissioner of Internal Revenue has permitted banks an allowance for bad debts based on a 20-years' moving average of their loss experience So long as this average includes the severe losses of the early 1930's it will permit the creation of generous valuation reserves for some banks They may be deducted from the Loans and Discounts and not show in the balance sheet

[4] Data for 1905–1930 for 25 New York banks from *Bank Stock Survey—A 26 Year History* (New York Gilbert Elliot & Co, 1931) Used by permission here In this period book value included capital and surplus funds of affiliated securities companies, where known Such affiliates were subsequently forbidden Data for 1937–1939 were compiled by the authors for the 17 largest banks for which figures were available Similar selected data for 1946–1949 were compiled from the annual studies of Blyth & Co on *Banks and Bank Shares* covering 37 stocks of important banks all over the United States These studies showed somewhat lower earnings for New York than for other large city banks

RETURN ON LEADING BANK STOCKS

| Year | Per Cent Earned on Average Book Value* | Per Cent of Average Book Value Paid in Dividends | Per Cent of Earnings Paid Out in Dividends | Ratios at Average Market Value: Times Book Value | Times Earnings | Dividend Yield Per Cent |
|---|---|---|---|---|---|---|
| 1905 | 9.3 | 5.26 | 56.6 | 1.78 | 19.0 | 2.97 |
| 1906 | 10.9 | 5.50 | 51.0 | 1.61 | 14.8 | 3.45 |
| 1907 | 9.7 | 5.53 | 57.2 | 1.36 | 14.1 | 4.07 |
| 1908 | 11.1 | 5.50 | 49.5 | 1.30 | 11.8 | 4.22 |
| 1909 | 10.4 | 5.40 | 52.0 | 1.53 | 14.8 | 3.51 |
| 1910 | 8.7 | 6.10 | 70.5 | 1.59 | 18.4 | 3.83 |
| 1911 | 9.9 | 6.07 | 61.6 | 1.54 | 15.7 | 3.94 |
| 1912 | 9.0 | 5.94 | 66.5 | 1.62 | 18.1 | 3.68 |
| 1913 | 8.0 | 6.50 | 81.0 | 1.46 | 18.3 | 4.44 |
| 1914 | 5.2 | 6.55 | 126.0 | 1.36 | 26.1 | 4.82 |
| 1915 | 10.6 | 6.44 | 61.0 | 1.42 | 13.4 | 4.55 |
| 1916 | 13.5 | 7.45 | 55.5 | 1.53 | 11.4 | 4.90 |
| 1917 | 9.4 | 6.74 | 72.0 | 1.39 | 14.9 | 4.83 |
| 1918 | 12.3 | 6.79 | 55.2 | 1.27 | 10.3 | 5.33 |
| 1919 | 12.8 | 6.70 | 52.3 | 1.46 | 11.4 | 4.60 |
| 1920 | 13.0 | 7.49 | 57.7 | 1.36 | 10.5 | 5.50 |
| 1921 | 6.0 | 7.43 | 125.0 | 1.19 | 20.0 | 6.25 |
| 1922 | 9.9 | 7.27 | 73.8 | 1.33 | 13.5 | 5.46 |
| 1923 | 10.7 | 7.37 | 69.0 | 1.41 | 13.2 | 5.22 |
| 1924 | 10.7 | 7.20 | 67.4 | 1.54 | 14.4 | 4.68 |
| 1925 | 12.0 | 7.50 | 62.3 | 1.94 | 16.1 | 3.88 |
| 1926 | 11.9 | 7.57 | 63.5 | 2.02 | 16.9 | 3.75 |
| 1927 | 12.6 | 7.85 | 62.5 | 2.51 | 20.1 | 3.11 |
| 1928 | 12.1 | 7.38 | 61.0 | 3.38 | 27.9 | 2.18 |
| 1929 | 12.2 | 6.92 | 56.5 | 4.29 | 35.0 | 1.62 |
| 1930 | 7.4 | 6.40 | 86.0 | 2.29 | 30.8 | 2.80 |
| Average for 26 years | 10.5 | 6.65 | 67.3 | 1.75 | 17.4 | 4.15 |
| 1937 | 6.5 | 4.47 | 72.0 | 1.32 | 19.9 | 3.64 |
| 1938 | 5.9 | 4.34 | 78.5 | .93 | 16.4 | 4.69 |
| 1939 | 5.7 | 4.21 | 77.5 | 1.05 | 18.2 | 4.53 |
| Average for 3 years | 6.0 | 4.34 | 76.0 | 1.10 | 18.2 | 4.29 |
| 1946 | 8.5 | 3.8 | 50.0 | .97 | 12.6 | 4.2 |
| 1947 | 7.0 | 3.5 | 54.8 | .78 | 12.2 | 4.5 |
| 1948 | 6.6 | 3.4 | 52.3 | .75 | 11.6 | 4.7 |
| 1949 | 6.5 | 3.7 | 57.4 | .82 | 12.5 | 4.5 |
| Average for 4 years | 7.1 | 3.8 | 53.8 | .81 | 12.2 | 4.5 |

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* Book value, or total capital funds, as used here consists of capital, surplus, and undivided profits

value for any length of time In the boom years 1926–1930, the ratio soared over 2 but with the reduced earning power and dividends per dollar of book value, the average fell to 1 10 for the three years 1937–1939 Earnings on the book investment of the stockholders continued low during the postwar years, 1946–1949 Dividends were but little more than half of the earnings in order to permit banks to build a net worth through retained earning more nearly in line with expanded deposits and loans Low earnings and dividends resulted in market values for bank stocks at a level below book investment

**Relation of deposits and stockholders' investment.** The ratio of deposit liabilities to the stockholders' investment, or net worth, is examined for two purposes first, as a measure of profit possibilities to the stockholders, to be derived from depositors' funds, and second, as a measure of the margin of protection provided the depositors by the owners' investment Since the bank hopes to earn more from the investment of depositors' funds than it spends in rendering services to the depositor, the presence of large amounts is indicative of profit potentialities On the other hand, too large liabilities to depositors in relation to the stockholders' investment may indicate inadequate protection of depositors On the other hand, a well-managed bank tends to restrict its investment in "risk assets," especially Loans and Discounts to its customers, in relation to its net worth Such restraint limits the type of investment that pays the highest return and so the profitability of the deposits Thus, while the deposit to net worth ratio rose from 5 7 in 1930 to 9 5 in 1940 and 17 2 in 1945, the ratio of risk assets to net worth declined from 5 1 to 4 0 and then to 3 8 in these same years Business loans and other lesser risk assets shrank in relative importance while holdings of Government obligations and cash expanded On the other hand, when business lending expanded after World War II, the risk asset to net worth ratio rose from 3 8 in 1945 to 5 2 in 1948, while the growth of net worth through retained earnings was reducing the deposit to net worth ratio from 17 2 to 14.2 Consequently a bank with a high ratio of deposits to net worth may earn but little more than one with a lower ratio When it does earn more it will tend to feel obligated to retain somewhat more of its earnings to build up net worth and pay somewhat less in dividends

As seen in a previous table, the deposits to net worth ratio rose for national banks from an average figure of 6 in 1930 to 17 in 1945 at the end of World War II Since then banks have made a persistent effort to build net worth, chiefly by retaining earnings

**Ratio of earnings to net worth.** In spite of their quasi-public nature, banks in reporting on their condition often state no more than the amount of net earnings, so that earnings analysis is often confined to a comparison of that figure with the book and market value of the bank's stock Sometimes even that is unreported, and the stockholder is obliged to rely upon "indicated" earnings as they may be inferred from the sum of any dividends paid plus any increase in Surplus and Undivided Profits The percentage earned on the average book value of leading New York City banks was shown on page 436 The average of 10 5 per cent for the 26-year period was distinctly higher than the figure for the average national bank, as may be judged from the table on page 439, which shows the earnings and dividends of all national banks as percentages of their combined capital, surplus, and undivided profits[5] The data for 1937–1939 show a reversal, presumably due to the tendency of idle funds to concentrate in New York and the greater decline in the interest rates for the open-market, highly liquid paper that is more likely to be held by metropolitan than by country banks

A comparison of the percentage paid in dividends shows that formerly the figure for all national banks was lower than that for leading New York banks but was substantially the same in 1937–1939 The former difference permitted these metropolitan banks to retain more earnings for reinvestment than the average national bank, but the situation has been reversed Ability to reinvest earnings at rates such as these banks have shown leads to growth in value at a very satisfactory compound-interest rate and would help to explain the tendency to value bank stocks at materially more than their book value

Sometimes a high return is explainable by reason of special sources of income such as trust department earnings, safe deposit rentals, real estate income, dealings in and the servicing of mortgages, and formerly profits from the security dealings of investment affiliates Members of the Federal Reserve system are still permitted to deal in domestic civil securities It is to be hoped that the practice of reporting special non-recurring profits or losses, such as those arising from the sale of securities, or unusual charge-offs of loans or investments, will continue to grow, in order that the stock-

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[5] Compiled from *Annual Reports of the Comptroller of Currency* A study of the years 1908–1928 is presented by Posey, Rollin, "Profits of Commercial Banks," *Harvard Business Review*, July, 1930, pp 425–434 For further discussion of the analysis of bank earnings, see Guthmann, H. G, *Analysis of Financial Statements* (New York Prentice-Hall, Inc, 3rd ed, 1942), Chapter XVI

EARNINGS AND DIVIDENDS OF NATIONAL BANKS IN RELATION TO NET WORTH 1920–1948

(Years ended December 31)

| *Year* | *Net Profits* | *Dividends* |
|---|---|---|
| 1920 | 9.4% | 5.8% |
| 1921 | 6.5 | 5.5 |
| 1922 | 7.2 | 6.2 |
| 1923 | 6.8 | 5.8 |
| 1924 | 7.5 | 5.7 |
| 1925 | 8.1 | 5.7 |
| 1926 | 7.9 | 5.7 |
| 1927 | 7.6 | 5.9 |
| 1928 | 7.9 | 5.6 |
| 1929 | 7.6 | 6.5 |
| 1930 | 4.1 | 5.6 |
| 1931 | *1.5 def* | 5.5 |
| 1932 | *5.1 def* | 4.2 |
| 1933 | *9.9 def* | 2.5 |
| 1934 | *5.1 def* | 3.0 |
| 1935 | 5.1 | 3.8 |
| 1936 | 9.9 | 4.3 |
| 1937 | 7.0 | 4.6 |
| 1938 | 6.0 | 4.3 |
| 1939 | 7.4 | 4.1 |
| 1940 | 6.8 | 4.1 |
| 1941 | 7.4 | 4.0 |
| 1942 | 6.5 | 3.7 |
| 1943 | 8.9 | 4.4 |
| 1944 | 10.0 | 4.3 |
| 1945 | 11.0 | 5.2 |
| 1946 | 10.1 | 4.1 |
| 1947 | 8.6 | 3.9 |
| 1948 | 7.6 | 4.2 |

holder may be properly informed as to the character of the earnings reported.

**Earnings and market value** While the relation of earnings to market value is very variable, it is significant that the average relation shown for New York City bank stocks was a market price 17.4 times earnings, or the equivalent of a return of 5.75 per cent. This figure and the average dividend yield of 4.15 per cent indicate the high esteem in which this class of stocks was held. The huge number of failures in the period 1920–1933, particularly after 1929, has to a great extent disturbed this confidence. However, the figures for 1937–1939 show that the leading metropolitan banks still offer a low dividend and earnings return on market value Unusual mortality of the early 1930's should have done much to eliminate weak institutions, so that the record for the future would appear more promising

**Importance of management in banking** Before purchasing bank stocks, one should make an especially close check on the management of the bank The personnel of the bank's board of directors and their underlying policies are matters of the utmost importance to the stockholder It is easily possible for a bank to make unsound loans and to pursue unsound policies for a considerable time without detection Not until the failure of some of its large debtors occurs does it become necessary to write off assets It should always be remembered that the stocks of a bank are no better than the *poorest* assets carried on its books, for the first losses must be borne by the stockholders Unwise policies, it is true, may increase current earnings for a time, at least, but eventually they are likely to prove disastrous to creditors and stockholders alike These words of caution are given to show that in studying the relative merits of one bank as compared with another too great reliance cannot be placed on mere statistical analysis Equally important is a thorough acquaintance with the bank's officers and policies

**Current problems in banking** While the intimate relation of banking to the whole business community makes it responsive to a multitude of factors, the present discussion is necessarily confined to the major factors currently affecting the outlook for bank earnings and consequently the attractiveness of commitments in bank stocks Three points that should receive particular attention are (1) the effect where the monetary situation creates unusually low interest rates, especially for short-term loans, (2) the tendency of large corporations to avoid bank borrowing, and (3) the insurance of bank deposits As a result of the huge liquidation of credit from 1929 to 1933, and of the policies of the Federal Government and the Federal Reserve banks, the commercial banking system had an unparalleled accumulation of excess reserves up to the heavy war financing of the early 1940's Even thereafter the Federal Reserve banks acted in close concert with the Treasury to maintain an easy money market that kept money cheap and available even during the postwar boom With Government borrowing a major part of the banks' earning assets at rates of one per cent and less, profitable operations, might be expected to be difficult However, banks met the problem by cutting the return paid on savings deposits, cultivating private borrowers, levying charges for various services formerly free, and developing supplementary activities, such as buying and selling mortgages that they subsequently manage for others With such large deposits, profits can be varied greatly by changes in the interest rate for Government and private loans and by changes in required reserve rations Idle cash reserves earn no return

Closely related to this problem is the apparently increasing tendency of large-scale business to avoid bank borrowing and to acquire funds on a more permanent basis by the sale of securities or by retained earnings The crash of 1920 made businessmen acutely aware of the hazard of short-term loans that might mature in an embarrassing manner at a time of credit strain The ease with which securities could be sold in the succeeding decade—particularly common stocks in 1928 and 1929—led to increased independence of bank credit The question arises as to whether there may not be a continuing lack of suitable demand for bank loans sufficient to raise interest rates to a profitable level If the depression had not taught its lesson so recently, the banks might have turned to bonds and real estate loans However, the risk of price fluctuation in the case of the former and the lack of liquidity of the latter discourage extensive commitments in that direction With high-grade bonds at record high prices, the risk of loss is regarded by many as considerable [6]

Finally, the cost of deposit insurance, which is required of all banks that are members of the Federal Reserve system, and which is optional to others, may constitute a serious burden in a period of low earnings The initial percentage levied for Federal deposit insurance under the original temporary fund was one-half per cent of those deposits eligible for insurance, whereas, under the Permanent Insurance Fund, as amended in 1935, the rate of assessment was limited to one twelfth of one per cent per annum, but based upon all deposits, whether insured or uninsured Subsequently, with the rise of the fund and a continued nominal loss ratio, some refunds have been made The insurance is valuable to the banks in reducing the risk of panicky withdrawals by depositors

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[6] It is possible that interest rates have moved to a permanently lower level, but the commercial banker who lends chiefly deposited funds is likely to be wary of pursuing a policy based upon a possible "new era" in interest rates For a review of mistaken forecasts, made by prominent financiers in 1899, see Rose, Dwight C, *A Scientific Approach to Investment Management* (New York Harper & Bros, 1928), pp 269 ff Where experience has indicated the stability of the savings deposits, a special case can be made for their investment in high-grade bonds and real estate first mortgages The combined commercial bank holdings of these latter investments seem to keep pace with time deposits

## Insurance Companies[7]

**Classification.** The business of insurance is ordinarily classified into three broad groups for investment purposes They are (1) life, (2) fire and marine, and (3) casualty, surety, and miscellaneous lines Companies serving each of these fields do not ordinarily offer insurance in the others although they may own stock in such other companies The *multiple-line* companies typically serve both the fire-marine and casualty-surety fields through a subsidiary or affiliated company controlled by stock ownership Some look to legislation that will gradually permit both of these two branches of insurance to be served by a single company All these fields are served by both stock and mutual companies Mutual companies have no stock and are owned by their policyholders even though operated under a special form of corporate organization Investment interest centers in the stock of the stock companies, although life insurance policies, which offer a mixture of insurance protection and savings contract, may also be considered to contain an important investment element

**Nature of life insurance.** It is necessary to have at least a general idea of the nature of the business of life insurance before one can determine the relative desirability of the stocks of life companies from an investment standpoint, and especially before one can make an analysis of the financial data available in connection with different companies It may be said that insurance companies deal in risks The business of life insurance has been so long established and varies so little, however, that the types of risk in which it deals can be measured very closely That is to say, while it is impossible to tell which members of a group of 1,000 males, age 20, will die during the ensuing year, it is possible to tell, with considerable precision, except in the event of a national catastrophe, how many out of the group will die Likewise, it is possible to compute the life expectancy of a normal man at any age Therefore, if the insuring company can spread its risks over a large group of men, it can afford to insure the life of each man in return for a premium that is computed on the basis of his life expectancy If there were no interest to be earned on accumulated premiums, each man would have to pay annually an amount sufficient to build up a sum equal to the value of his policy at death, plus whatever operating expenses and profit were required by the company as an inducement for it to continue in business As it happens, a large part of the life insurance premium is immediately invested by the insurance company Accordingly, when the premium to be charged is computed, it is assumed that a certain rate of interest will be earned on the unused portions of current premiums This picture of the basic principles on which life insurance companies operate is, of course, very general There are many different types of policies issued that we need not consider, since they all involve the basic principles just discussed

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[7] The following articles, which appeared in *Barron's*, will prove helpful as collateral reading

1 Carroll, G W, "Investment Tests for Insurance Stocks," Jan 25, 1937, p 7

2. ———— "Testing Life Insurance Stocks," Feb 1, 1937, p 18

In the *Commercial and Financial Chronicle*

1 Van Deusen, E A, "Fire Insurance Stocks for Investment in 1948," Feb 26, 1948, p 906 Yield data, dividend coverage, equity growth, and market performance in 1948

2 Geyer, G, "Outlook for Insurance Stocks" Feb 24, 1949, p 860

**Mortality tables and interest rates in common use.** In the computation of the premiums to be charged for various policies, the life insurance companies of this country use mortality tables based upon their past experience Because of rising health standards mortality tables have gradually come to overstate actual deaths at the various ages and so in recent years a newer table reflecting our greater national longevity has been introduced for calculating insurance premiums

People who purchase annuities, or life incomes, from life insurance companies show an even greater longevity than those who buy life insurance Consequently separate mortality tables are used in calculating annuity rates These tables have had to be revised a number of times in recent years to allow for the lengthening of life

During the 1920's, life companies assumed they would be able to earn 3 and 3½ per cent on the investment of the reserved portion of life and annuity premiums As interest rates declined after 1930, actual earnings declined below this level and successive reductions have had to be made in the interest rate assumption Today, rates as low as 2 and 2½ per cent are employed

**Sources of profit for insurance companies.** We may consider at this point the manner in which the insurance company ordinarily makes a profit Actual mortality will ordinarily be less than the "expected" mortality used in setting the premium rate, so that the amounts collected will exceed the amounts required to cover actual death losses Furthermore, the companies will generally earn more than the interest rate that it is assumed will be earned upon the temporarily unused portion of the premium It is also possible that operating expenses may be less than the "loading"—

that is, the element added into the premium to cover operating expenses. While these three sources of gain offer a sum that is potentially very large, it is necessary in actual practice for even stock companies to share the major portion with the policyholders either in the form of low premium rates or partial participation in profits through "dividends," because of competition with the mutual companies, which do the bulk of the life insurance business in the United States.

**Recent growth in life insurance business.** Conditions in recent years have been generally favorable to life insurance, and growth has progressed at a rapid rate. Some idea of this growth and the large importance of the business may be had from the following table.

GROWTH OF LIFE INSURANCE COMPANIES
IN THE UNITED STATES*

(Millions of Dollars)

| *Year* | *Total Assets* | *Total Insurance in Force* | *New Insurance Written During Year* |
|---|---|---|---|
| 1900 | 1,742 | 8,562 | 1,846 |
| 1910 | 3,876 | 16,404 | 2,557 |
| 1920 | 7,320 | 42,281 | 8,105 |
| 1930 | 18,880 | 107,948 | 19,020 |
| 1940 | 30,802 | 117,794 | 12,892 |
| 1945 | 44,797 | 155,723 | 16,433 |
| 1948 | 55,512 | 206,578 | 28,805 |

* *Statistical Abstract of the United States*, 1948, p. 456, and *Spectator*, Oct. 1949, pp. 9, 36.

The annual amount of new business written and paid for increased from less than $2 billion in 1900 to over $28 billion in 1948. In 1900 the total amount of life insurance in force was $8.5 billion; and in 1948, over $206 billion. When one considers this very rapid increase in the volume of business underwritten, together with the fact that modern science has substantially increased the life expectancy of the insured, it is easy to understand why the value of the stocks of well-managed insurance companies have been highly regarded. Furthermore, in view of the present rigid supervision to which stock companies are subjected in respect to all departments of their business and of the very conservative lines upon which they are run, stocks of the leading life companies must ordinarily be classed as a conservative type of investment.[8] Liabilities, in so far as the present mortality tables and low interest rates are used in computing legal reserves, are overstated rather than understated[9] Assets, on the other hand, consist almost entirely of securities A further analysis of the types of securities held by life insurance companies shows that by far the largest percentage is in bonds and real estate mortgages The table above shows that at the end of 1948 these companies had over 90 per cent of their assets invested in real estate mortgages and the securities of business and government Included under business obligations are some stocks, chiefly preferred, equal to 2 per cent of assets Common stocks are only about one half of one per cent of total assets Most of the real estate shown consists of office buildings used in operations (2 per cent of assets), although in depression foreclosed real estate may be important Policy loans at 4 per cent of assets are at an historically low proportion of the total The miscellaneous assets are mostly cash and balances owing from agents

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[8] In some jurisdictions, regulation of investment policy has permitted speculative commitments, and consequently a check on the list of investments held by a company is important.

DISTRIBUTION OF ASSETS
UNITED STATES LIFE INSURANCE COMPANIES
(000,000 Omitted)

| Year | U S Gov't Securities | All Other Gov't Bonds | Securities of Business & Industry* | Mortgages | Real Estate | Policy Loans | Misc Assets | Total |
|---|---|---|---|---|---|---|---|---|
| 1921 | $ 841 | $ 678 | $ 1,940 | $ 2,792 | $ 186 | $1,058 | $ 441 | $ 7,936 |
| 1930 | 336 | 1,135 | 5,347 | 7,578 | 548 | 2,807 | 1,129 | 18,880 |
| 1940 | 5,857 | 2,502 | 9,178 | 5,958 | 2,060 | 3,091 | 2,156 | 30,802 |
| 1945 | 20,583 | 1,898 | 11,123 | 6,636 | 857 | 1,962 | 1,738 | 44,797 |
| 1948 | 16,770 | 2,345 | 20,350 | 10,855 | 1,060 | 2,065 | 2,155 | 55,600 |

* Chiefly bonds Preferred stocks under 2 and common stocks under 5 per cent
Source *Life Insurance Fact Book*, 1949, p 48

Up to this point, discussion has been confined largely to the position of life insurance companies as a class No effort has been made to treat the different bases to be used in an analysis of the relative desirability of the stock of one company as compared with another

**Investment tests, past history, and rate of growth** The first test suggested in the analysis of an individual company is the rate of growth experienced by the company in question It is true that total or aggregate business underwritten by all companies has greatly increased during the past fifty years, but this fact does not necessarily mean that the business of any one company has likewise increased The volume of new business written annually, the kind of business, and the total insurance in force should be studied over a ten-year period, and the rate of growth should be at least equal to that shown for the country as a whole There is strong presumptive evidence against a company whose new business is not showing satisfactory expansion Such a situation may result from any of several causes The management may not enjoy the confidence of possible insurers, costs of doing business may be so high that premium costs are excessive, the types of policies the company issues may be unsatisfactory, or the officers may not be sufficiently active in promoting sales In any event, much of the real profit derived from investment in life companies results, in the final analysis, from a rapid growth in business underwritten. This increase frequently makes it necessary to obtain additional capital for the business, that is customarily acquired by increases in capital stock Such increases are likely to result in valuable subscription rights to the stockholders of the company

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[9] This statement may be untrue for the annuity business, which is relatively small for most companies, but which has been somewhat unprofitable Premium rates in this field have been readjusted from time to time for new policies Interest earnings also may fall below requirements for particular groups of policies and occasionally for total business

**Operating tests.** Another test of the policies of the management of a given company is found in the ratio of actual to expected mortality In most companies this ratio will run between 50 and 60 per cent Obviously the greater the care used in the selection of risks, the lower will be this ratio The effect of a low mortality ratio on earnings has already been discussed Closely akin to this ratio in its effect on earnings is the *net* rate earned on *mean ledger assets* Stated somewhat less technically, we are interested in the percentage earned on investments Where companies earned as much as 5 per cent during the 1920's, the average rate has declined until currently it is in the vicinity of 3 per cent Any excess of actual earnings over the rate required to maintain reserves at the assumed interest rate constitutes a safety factor, which may be used to pay "dividends" to policyholders if policies are "participating" or to build surplus, out of which conservative dividends may be paid to stockholders in the care of stock companies

The investor is also interested in the expenses that the company incurs He will want to know not only the expenses incurred in the process of securing business, but also those incurred in the conduct of the business In order to study the operating expense factor the following ratios are generally examined

1 First-year commissions to new premiums

2 Total first-year expenses to new premiums

3 Total insurance expenses less first-year expenses to renewal premiums

The reason for distinguishing between new and renewal business is that the cost of acquiring new business, because of commissions and the medical examination, makes its expense ratio much higher than that for renewal business These ratios, and sometimes others, are ordinarily given in the various published reports of insurance companies as found either in the annual reports of various state insurance commissions or in *Best's Life Insurance Reports*[10]

**Net earnings and book values.** One of the most difficult aspects of analyzing life insurance company stocks is that of interpreting net earnings and the book value of assets per share of stock With a typical industrial or public utility company, the computation of earnings and assets per share of stock is largely a matter of accounting With the life insurance company, however, the accounting reports must be interpreted in the light of the actuarial methods employed The figures in the gain and loss exhibit (profit and loss statement) are based upon the previously mentioned assumptions as to mortality, interest rates, and operating expenses A gain is reported only when mortality is less, interest earnings more, or operating expenses less than assumed in making up premium rates Two companies that assumed different interest rates might thus show different "profits" even though they both earned the same rate of return on the same amount of assets

In the balance sheet the reserve liability to policyholders is correct only in so far as· (a) the actual mortality equals expected mortality, (b) the investment earnings equal the assumed rate of interest on investments, and (c) operating expenses equal the 'loading" factor in the premium In practice, as we have seen, many companies perform better than is assumed As a practical matter, therefore, the liability Net Reserves-life account is generally in excess of what will actually be required to meet claims A part of this account, therefore, is the equivalent of surplus, and not a real liability Accordingly, if one computes earnings strictly on the basis just described, he is being overconservative in those years in which the reserve increases Actual earnings will be somewhat in excess of his computations The extent to which further additions should be made, however, is a matter of estimate and depends on the ratio of actual to expected mortality, the investment return which the company shows, and its cost of doing business

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[10] It is recommended that the student refer to *Best's Life Insurance Reports*, for further explanation of the ratios discussed in the present section of this chapter In the introductory section will be found an illuminating discussion of life insurance principles and practice The subject is necessarily intricate and cannot be fully covered here because of the limitations of space

Furthermore, there will be the question of what proportion of such savings must be shared with policyholders in order to meet the pressure of competition from mutual companies that make similar gains. Because of considerable variation among companies, it is impossible to develop a formula that can be used satisfactorily for making this estimate. The net profits are the best single measure of the advantage derived from underwriting and investment activities, but it is customary to make allowance for a year in which substantial additional business is placed on the books, on the principle that special expenses incurred in obtaining such increased business will be balanced by increased earnings if the business can be retained in subsequent years at very small expense. The relation of book value to the market or investment value, just as in the case of bank stocks, will vary with earning power.

**Analysis of return on leading stocks.** Because of the small number of large stock companies operating in the life insurance field, investment interest has been limited. That such stocks as were available were highly valued is apparent from the following table showing the relation of dividends, earnings, and book value to the average market price for the selected years from 1935 to 1949.[11]

MARKET PRICE RATIOS OF STOCKS OF LEADING STOCK LIFE INSURANCE COMPANIES 1935–1949

(Adjusted data)

| | *1949* | *1948* | *1947* | *1946* | *1945* | *1940* | *1935* |
|---|---|---|---|---|---|---|---|
| PER CENT OF DIVIDEND YIELD ON AVERAGE MARKET PRICE | | | | | | | |
| Aetna Life | 3.82 | 4.19 | 3.69 | 3.06 | 3.19 | 5.02 | 2.41 |
| Connecticut General | 2.18 | 2.59 | 2.54 | 2.19 | 1.89 | 3.08 | 2.39 |
| Travelers | 3.49 | 4.04 | 3.23 | 2.80 | 3.11 | 3.75 | 3.07 |
| PER CENT EARNED ON AVERAGE MARKET PRICES | | | | | | | |
| Aetna Life | 24.89 | 31.04 | 22.48 | 10.78 | 6.83 | 16.83 | 10.04 |
| Connecticut General | 20.40 | 25.89 | 17.16 | 8.82 | −2.52 | 26.08 | 11.58 |
| Travelers | 29.98 | 32.34 | 17.99 | 5.21 | 11.27 | 15.55 | 5.71 |
| RATIO OF AVERAGE MARKET PRICE TO BOOK VALUE AT END OF YEAR | | | | | | | |
| Aetna Life | 1.36 | 1.16 | 1.07 | 1.36 | 1.29 | 1.04 | 1.42 |
| Connecticut General | 0.90 | 0.74 | 0.77 | 0.84 | 0.86 | 0.63 | 1.25 |
| Travelers | 0.83 | 0.79 | 0.88 | 1.11 | 1.07 | 1.30 | 2.60 |

Dividends were a low per cent on market price, usually running between 2 and 4 per cent. Earnings were higher, much higher in the extraordinary postwar years. Rapid growth of business in these years made expansion of net worth by retention of earnings very desirable. While each of the three relationships varied considerably, the ratio of book value to market price has been most regular, averaging around one during the 1940's shown In these computations neither contingency nor special reserves were included in book value, although some analysts would include the former

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[11] Computed from *Standard Corporation Descriptions* data.

An explanation of the low dividend yield may be found in the opportunity for growth in earnings at a profitable and rapid rate Earnings in good years have frequently been in excess of 10 per cent of the stockholders' invested capital (The reader may derive these percentages from the preceding tables by multiplying the percentage earned on market price by the ratio of market to book value ) A substantial part of earnings was retained in the case of all of these companies, as may be seen by a comparison of the percentage earned and the percentage disbursed as dividends Subscription rights have in the past also shown opportunities for growth A large part of the high return can be attributed to the very high ratio of business to the net worth Reserve liabilities to policyholders ran from ten to twenty times the stockholders' investment Under such conditions even a small loss of assets would appear large in relation to the stockholders' equity The fact that losses were not more substantial in years of declining security prices can be attributed to the predominance of bonds and real estate mortgages among the assets and the practice of using amortized rather than market values

The assets of insurance companies consist largely of the highest type of investment securities Their stock, therefore, represents the ownership equity in a fund ordinarily consisting of diversified and well-selected first mortgages and bonds Furthermore, the actuarial certainty with which losses can be predicted minimizes the hazards of their type of insurance business In the case of growing companies, there is also an opportunity for the same compounding process from retained earnings that we observed in the case of banks Each dollar of added investment, whether coming from earnings or from new investment, enables the company to increase its business—and consequently its earnings—many times The chief hazard for companies after they have passed the initial stage of development lies in a speculative investment policy, a fault that has developed in a few companies organized in states with either weak legislation or inexpert regulation Because reserve liabilities are relatively large, generally running from ten to twenty times the stockholders' equity, investments in common stocks or speculative bonds could result in insolvency in the event of even mild business recession

**Fire insurance compared with life insurance.** The business of fire insurance is similar in some respects to that of life insurance Nevertheless there are points of wide dissimilarity that are fundamental to the investor If we consider first the points of similarity, we find that the chief business of fire companies is the assumption of risks Actuarial standards have been set up by which the company can determine what percentage of similarly located structures of a given type will burn each year, although it cannot tell which particular ones will burn It is possible, in other words, to express mathematically the chance of loss on any given policy The company, of course, can afford to take such risks if it writes a sufficient number of policies, covering risks in different locations, to permit the law of averages to work In computing the premiums necessary to cover the risks involved in their policies, fire companies likewise assume that the unused portions of their premiums will be invested, but the period of prepayment before use is so short that it makes the factor a minor one, whereas in the life field it is of major importance

In considering, next, points of dissimilarity, one must first take into account the length of time that fire policies normally run Generally speaking, fire insurance policies, and such other policies as are customarily written by fire companies, run for one, three, or five years After the expiration of the policy, no further liability attaches to the company, and the whole premium may be considered to have been earned by the company at that time, if no claims for losses have been presented to the insurance company In theory, as well as in practice, therefore, the business of fire insurance differs basically from that of life insurance The fire insurance company is not required to set up out of premiums the same kind of reserve against policies in force as are life companies The former type of company, upon writing a policy, credits an unearned premium account for the entire premiums received. As the policy continues in force, a certain portion of the unearned premium is considered to have been earned The premium is prorated evenly over the life of the policy, no compound interest assumption, such as is necessary in computing life insurance reserve liabilities, being employed In the reports of each company will be found both the premiums written (cash basis) and the premium income earned (the accrual basis, just described) The balance sheet will show unearned premiums as a liability

Another point to be observed in a comparison of fire and life insurance is the much greater danger of concentrating risks in the former A fire insurance company may have a rather large total of risks in a given city This presents a dangerous situation, even though a proper distribution of risks is found within the city itself At the time of the San Francisco earthquake and fire, many companies suffered very severe losses, but, owing to a distribution of business all over the country, the major companies had sufficient resources to withstand the terrific claims presented This risk, known as the "conflagration hazard," is guarded against in part by reinsuring when too great a concentration of business appears on the company's books, but it cannot be entirely eliminated The only way a similar concentration of risk could be assumed by a life company would be to write a very large policy on the life of one man A life insurance company can also protect itself by reinsuring with other companies a part of its risk, in an effort properly to adjust its individual risk to the total volume of business on its books An atomic bomb attack might also affect a small life insurance company with inadequate geographical diversification of risks as well as a similar fire insurance company.

**Investment status of fire insurance stocks.** Despite these points of dissimilarity, the stocks of well-managed fire insurance companies present attractive opportunities, for many of the reasons that were set forth in the discussion of the investment merit of life insurance stocks The business of fire insurance is basic, and its growth keeps pace with the increase in material wealth Well-established companies participate in this growth and are able to handle an increasing amount of business annually with surplus earnings reinvested in the business Where the company's business grows so rapidly that it cannot be adequately handled on the basis of its growing surplus account, additional funds are generally acquired by the issuance of common stock to present stockholders at a price below the current market price, thus creating for such stockholders valuable subscription rights

Whereas life companies invest chiefly in mortgages and bonds, fire companies invest chiefly in bonds and stocks Two reasons for this difference in investment policy may be given In the first place, the shorter life of the fire company contract and the possibility of a conflagration loss have made it desirable to concentrate on marketable investments, a policy that excludes mortgages In the second place, the larger net worth (relative to liabilities) of the fire companies has made it possible for them to purchase some common stocks in spite of their fluctuating value The investments that may be made by fire insurance companies are frequently restricted by the states in which they do business, but the company is usually given a much wider choice than is allowed the life company. Where the officers of the fire insurance company are capable, however, this situation is likely to operate to the advantage of its stockholders, for it is possible, in view of the wider latitude given, to increase the average yield on funds invested. In fact, some of the leading fire companies have made substantial profits through the purchase and sale of securities and the appreciation of common stock holdings.

**Investment analysis age and rate of growth.** Our next task will be to develop a technique that may be applied in testing the desirability of the stock of one company as compared with that of another. In this connection the matters of age and past rate of growth should be considered. Other things being equal, the older companies are the more desirable. The reason is that the longer a company has been in business, the wider its distribution of risks is likely to be. Likewise, each added year of operation finds a company with able management more firmly entrenched in respect to both finances and prestige. The more widely known a company is, the lower will be the cost of securing new business. Rate of growth is an important factor to consider in view of the fact that it is the rapidly growing company that offers the greatest opportunities for increasing earnings and valuable subscription rights, or possible stock dividends.

**Comparison of capital and surplus with liabilities.** The combined surplus and capital account of the company represents the excess of admitted assets over all liabilities and measures the stockholders' investment in the business. The amount of this item in relation to combined liabilities constitutes a safety factor for the policyholders. Two differences exist in this relationship as compared with that of other financial institutions, such as commercial banks and life insurance companies. The first is the practice of stating the major assets, which are bonds and stocks, at market value so that the common stock equity varies with the market. This practice grows out of the tradition that the business should be in a liquid position to meet any great catastrophe, such as a conflagration. The other difference is the more substantial stockholders' equity in relation to liabilities, it will typically run between a half and an amount equal to the liabilities.

While a low stockholders' capital means that the company is so much the weaker to meet unusual insurance losses, the hazard of investment losses for such a company can be reduced by a more conservative investment of the assets. A more substantial investment in cash and Governments, on the one hand, and a reduced proportion of common stocks, on the other, can keep the nonfluctuating assets adequate to cover all liabilities with some margin Something of this differential investment policy is found among many of the casualty companies, which have, as a class, grown more rapidly than the fire companies in recent years and so have more of a problem of keeping the stockholders' investment in line with expanding liability to policyholders

**Investment policies** Without attempting to correlate the investment policy of the individual company with its liabilities, the accompanying figures of the assets of some leading companies will give an idea of characteristic policies as well as the variety of deviations One characteristic is the high proportion of cash assets, that is, cash and receivables, and of highly liquid Governments Another part of this general policy is the very small proportion of relatively unmarketable real estate and real estate mortgages Exceptional for a financial institution is the devotion of a part of the funds to fluctuating, but generally well-rated common stocks Stock holdings should be a small enough fraction of assets so that their most severe declines can be absorbed by surplus on the other side of the balance sheet and leave the company sound

COMPOSITION OF ASSETS OF SOME LEADING INSURANCE COMPANIES

(As of December 31, 1918)

| | *Admitted* | *Per Cent* | | | | | |
|---|---|---|---|---|---|---|---|
| | *Assets (Millions)* | *Bonds* *U S* | *Bonds* *Other* | *Stocks* *Prefd* | *Stocks* *Com* | *Real Est Mort, etc* | *Cash Receiv, etc* |
| Fire Marine | | | | | | | |
| Home Insur | $302 | 39 7 | 9 6 | 10 0 | 23 2 | 1 4 | 16 1 |
| Nat'l Fire | 83 | 39 4 | 6 5 | 11 2 | 16 7 | 3 8 | 22 4 |
| Phoenix Insur | 116 | 30 8 | 13 3 | 13 1 | 23 1 | 0 6 | 19 1 |
| Casualty Surety | | | | | | | |
| Aetna Cas & Surety | 150 | 45 6 | 16 1 | 7 8 | 13 9 | 1 0 | 15 6 |
| Continental Casual | 105 | 30 4 | 18 0 | 5 4 | 12 7 | 3 5 | 30 0 |
| New Amsterdam | 86 | 59 4 | 5 9 | 4 9 | 3 6 | 7 0 | 19 2 |
| Multiple Line | | | | | | | |
| Continental Insur | 250 | 26 6 | 17 1 | 7 6 | 34 9 | 1 1 | 12 7 |
| Hartford Fire | 396 | 49 1 | 5 3 | 10 5 | 10 0 | 1 5 | 23 6 |
| Insur Co of N Am | 334 | 29 3 | 5 5 | 16 6 | 31 8 | 1 6 | 15 2 |

Source Compiled from *Insurance Stocks 1948*, a study by Blyth & Co, Inc

**Unearned premium reserve.** The nature of the liability for unearned premiums has already been explained as the proportionate part of any premiums for which the period of coverage has not expired Legally, this amount is the sum the company would be obliged to return to the policyholder if it elected to cancel the policy Practically, however, the amount is in excess of the sum the company will ordinarily need to carry out the contract The reason is that the operating expenses are not spread evenly throughout the life of the policy Most of the expenses, such as the salesman's commission and the cost of inspecting the risk and issuing the policy, are incurred at the time the policy is written Once the policy has been written, the chief costs are the actual fire losses and the expense of adjusting claims arising therefrom In practice, the losses incurred will ordinarily run less than 60 per cent of the premiums, and it has become customary to regard about 40 per cent of this liability reserve as being the equivalent of surplus in the case of fire companies The per cent used for casualty companies should be based upon the types of business underwritten Although 40 per cent is used by some, the higher average loss ratio would suggest a lower per cent—possibly 35 per cent in the average situation[12] If a company that was reasonably well managed were being liquidated, it would not find it necessary to cancel its policies but could reinsure its risks for an amount substantially less than its unearned premium liability, presumably less by the percentages noted

**Ratio of losses incurred to premiums earned.** To estimate more accurately the benefit that the company will derive from its earned premiums, it is necessary to consider the ratio of losses incurred to premiums earned The significance of this ratio becomes clear if we consider that the premium income of a fire or casualty insurance company is not all earned in the year in which it is paid, for the reason that premiums are required to be paid in advance Premiums earned represent that portion of the premiums that expires during the fiscal year, a substantial part of which will have been collected in preceding years Losses, on the other hand, represent the actual amount of losses reported or estimated as occurring during the year If, therefore, one compares the losses incurred to premiums earned, he has an excellent index of the loss experience of the company during the period covered

**Ratio of underwriting expense to premiums collected.** A further comparison is necessary, however, before the complete picture is available Every company has its overhead, or operating, expenses, which consist of such items as commissions, rent, salaries, and taxes These are generally grouped under the heading "Underwriting Expenses" Such expenses may be studied as a ratio, or percentage, of the premiums earned, and therefore, in connection with the "loss ratio" already mentioned, they tell what remains in the way of accounting profit from the premium income Because so much of the expense is connected with the acquisition of the business, some believe that a fairer measure of the operating efficiency, as distinguished from fire loss experience, is the ratio of expenses to premiums *written* rather than the ratio of expenses to premiums *earned* Generally speaking, a company may be said to be reasonably successful if it can keep its losses and underwriting expenses within 100 per cent of its earned premiums, thus leaving its net investment earnings free for its stockholders

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[12] A fuller discussion may be found in the prefatory material in *Best's Reports* (annual) for *Fire and Marine* and *Casualty, Surety and Miscellaneous* companies

Some average (median) experience of large, well-known fire and casualty companies is given with respect to their losses and expenses for the period 1944–1948 In order to avoid emphasizing the fleeting influences of any particular year, the ratio for each company was figured as an average for the five years The middle, or median, ratios for each of the three groups of some 34 fire and marine, 12 casualty-surety, and 12 multiple-line companies are fairly similar The most apparent difference is the lower indicated profit margin for the fire than for the casualty companies Had the period included depression years the loss ratio would have been expected to be higher and the profit margin lower The margin is referred to as "indicated" rather than "actual" since the loss ratio is a per cent based on premiums *earned* and the expense ratio on premiums *written*, and so their combination is an indication of probable results over the years rather than the reported accounting profit, which is based wholly on premiums *earned*

OPERATING RATIOS OF FIRE AND CASUALTY INSURANCE COMPANIES

Average of Company Experience for 5 years 1944–48

(Median companies)

| | *Fire-Marine* | *Casualty-Surety* | *Multiple Line* |
|---|---|---|---|
| Loss ratio | 56 0% | 55 5% | 56 6% |
| Expense ratio | 41 9 | 39 7 | 38 3 |
| Profit margin indicated | 2 1 | 4 8 | 5 1 |

Source Compiled from *Insurance Stocks 1948* by Blyth & Co , Inc

**Net earnings and book value per share.** We are now ready to consider methods for computing the net earnings of fire insurance companies and the liquidating value per share of stock The income account, or statement of operations, of the company will show three sources of loss and gain (1) gain (or loss) from underwriting, consisting of premiums earned less losses and underwriting expenses, (2) net income from investments, consisting of interest, dividends, and rents less any investment expenses, and (3) profit (or loss) on the investment account that may be the result of the sale of securities and of unrealized amounts of loss or gain owing to changes in the market value of investments The third group of items may be regarded as unusual or as "capital" gains and losses, and may be eliminated for some statistical purposes Because of the "hidden surplus" element in the unearned premiums liability, a further adjustment is commonly made in the reported earnings by adding 40 per cent of any net increase (or subtracting any such decrease) in the unearned premiums to the earnings shown Such an adjustment is particularly helpful in interpreting results in years during which the liability has changed greatly

The liquidating value of a fire insurance stock may be estimated by adding 40 per cent of the unearned premium reserve to the book value of the stock (that is, to the sum of the capital stock and surplus) [18] Per share figures are obtainable by dividing results by the number of shares outstanding This figure is studied from year to year to note progress of the liquidating value as it is affected jointly by change in security prices and any retention of earnings from operations

Operating results, then, are best studied by examining the earnings from insurance activities and ordinary investment income, the former suitably adjusted for a fraction of the changes in the Unearned Premium liability The influence of security fluctuations is best studied separately in its relation to the fluctuations of liquidating value of the company's stock Most analysts make little distinction between appreciation in liquidating value that represents actual realized profit from the sale of securities and that which results from an unrealized gain from a rise in market value over cost Actually, the latter will have to bear a capital gains tax if the gain is "realized" later by a sale The analyst's usual argument is that such a potential tax is a mere contingent possibility, which, because of a fairly permanent investment policy may be postponed indefinitely and that in the meantime such values are at work producing investment income for the stockholder as much as any dollars of realized capital gain

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[18] Further adjustments may be necessary because of the conventional practice of some reporters of accepting the company's balance sheet classification, even where the textual matter of the annual report reveals understatements For example, the Annual Report of the Fidelity and Deposit Company of Maryland for 1949 stated that (1) the market value of securities including a subsidiary exceeded book value by $2,300 000, (2) there was also a Reserve for Contingencies ($1,350,000) and a Reserve for Fluctuation in Market Value of Securities ($1,853,000) included among the liability reserves in the balance sheet, and (3) real estate was reported to be carried at $1,066,000 less than assessed value The relative importance of these items can be gained by comparison with a Capital and Surplus of $17,787,000 and an Unearned Premium liability of $15,502,000

To give operating and liquidating value figures their maximum value for study, they are best set up on a per share basis for a period of years The operating earnings might, for example, be set up to show the three basic influences (1) underwriting earnings, (2) ordinary investment income, and (3) income taxes on a per share basis By showing the dividend per share in such a tabulation, the amount retained from operating earnings can then be inferred Then by showing the year-end liquidating value per share and its changes, the comparative influence of such retained earnings and of security price fluctuations can be more readily visualized Occasionally, these figures will require the reader to make an allowance or adjustment for special and unusual influences, such as an extraordinary surplus adjustment, a stock dividend or splitup, or the sale of new stock at a different figure than liquidating value

After examining these figures on earning power and liquidating value, he compares them with the price he will have to pay to acquire the shares· namely, market price Some illustrative figures may be seen in the accompanying table, which illustrates the relationship of price to earnings, dividends, and liquidating value for some major insurance companies These relationships will vary from time to time with stock market and business conditions The similar figures for the individual company will also vary with the size of the company, its statistical position, and the prestige it has with the investment community

ILLUSTRATIVE RELATIONS OF OPERATING EARNINGS, DIVIDENDS, AND LIQUIDATING VALUE OF STOCKS OF SOME LEADING INSURANCE COMPANIES WITH MARKET PRICE AT DECEMBER 31, 1948

| | *Dividend Yield* | *Earned on Market* | | *Price to Liquidating Value* |
|---|---|---|---|---|
| | | *1948* | *Average 1944–48* | |
| Fire-Marine | 4 14% | 16 3% | 7 2% | 62 7% |
| Multiple line | 2 98 | 17 1 | 8 9 | 75 9 |
| Casualty surety | 4 01 | 15 6 | 10 6 | 66 2 |

Source Compiled from *Insurance Stocks Comparative Data as of Dec 31, 1948*, by Blyth & Co

**Investment experience with insurance stocks** A number of companies, such as were included in the group results of the preceding table, could point to a long unbroken record of dividends

At the worst most of these major companies merely suffered brief and temporary eclipse of dividends for one or a few of the worst depression years of the early 1930's This dividend reliability is a result of conservative payments during good years Some companies relate their payments to a portion of their relatively stable investment income, ignoring underwriting gains and security profits

A study of 30 major stock fire insurance companies showed that income is about as variable from year to year as it is for industrial companies Underwriting profits show a strong correlation with business activity, rising in good times, falling in depression The fluctuations in reported earnings are accentuated for some by the practice of carrying stock investments at their market value in the balance sheet and showing any adjustment in valuation in the investment income exhibit The market price of the insurance company's own outstanding stock shows a more consistent relation with liquidating value than with the earnings and dividends Insurance stocks rose with the general stock market and in 1928 sold on the average at about 1 6 times liquidating value, for the year 1932 the ratio fell to 0 7, between 1934 and the date of the study, 1940, the ratio was substantially 1 0.[14]

Stocks of companies engaged in the insurance field have received particular attention since the growth in popularity of common stocks in the 1920's Because a substantial share of the profits of these companies is derived from investment income including dividends, the companies are regarded as a kind of investment trust. They have the advantage over the generally newer investment trusts in their longer record for a period of years, which makes possible a more certain estimate of investment quality

The fire insurance companies were able to go through the depression period with but one large company in serious difficulties, and that company was subsequently reinstated Out of about fifty casualty insurance companies, however, almost one half, as a result of heavy underwriting losses, went into the hands of their respective state insurance departments Fire companies were reported to have found it necessary in some instances to give financial aid to their casualty insurance subsidiaries Many of these were smaller companies, but a few were major units The types of business causing the heaviest losses were· (1) guaranty of mortgages; (2) workmen's compensation, (3) surety bonds on bank deposits in 1930–1932, and (4) fidelity and surety bonds in 1930–1932 [15] The guaranteeing of real estate mortgages and of acting as surety for bank deposits have been abandoned It is of interest that both are now functions of Federal agencies—the Federal Housing Administration and the Federal Deposit Insurance Corporation With these changes, casualty companies hope to approach the stability of the fire companies, although casualty lines may continue to cause more fluctuating underwriting results than fire lines On the other hand, recent years have seen better earning power and more vigorous growth of casualty than of fire company stocks

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[14] Van Deusen, Edgar A, "Further Gains for Insurance Companies," *Barron's*, February 12, 1940, p 18

[15] Abbot, Henry W, "Insurance Stocks in Favor Again," *Barron's*, June 17, 1935

# 16

# Financial Institutions—Investment Companies

**Definition of investment companies.** Investment companies, or investment trusts as they are often called, may be defined as financial institutions organized for the purpose of enabling the individual investor to obtain the advantages of wide diversification in a single commitment Their principal business is the investment of funds in a varied list of stocks and bonds Their capital obligations represent participation in the assets held, and offer to the small investor a distribution of his investment risks that would be otherwise impossible Investment companies differ from holding companies in that the latter are usually formed for the purpose of acquiring control over one or more operating companies, while the former purchase securities solely as investments

**Origin and development of investment companies.** The investment company, while comparatively new in this country, has long been known in Europe The first investment trust seems to have been founded in Belgium in 1822[1] In 1860 the first Scottish investment trust was set up At this time British bonds were selling to yield only a 3 per cent return, whereas foreign government bonds were yielding from 5 to 6 per cent Scottish investors were impressed with the higher return on foreign bonds, but did not care to assume the risk of losing all their capital by committing it to one foreign investment The investment company was formed in order to diversify this risk

These early institutions were created under a legal form known as the Old English Trust A few people who had had wide experience in the management of large trust estates were appointed trustees, and capital was intrusted to them for the purpose of acquiring securities The individual members of the trust received shares therein according to the capital invested In the event of oversubscription to the capital of the first trust, second, third, and fourth trusts might be formed under the same management and by-laws as the first In each case, however, the management followed the basic principle of diversifying the securities purchased for the trust account The typical London and Edinburgh trusts, as distinguished from the financial company to be described later, have the following characteristics.[2]

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[1] *Federal Reserve Bulletin*, January, 1921, Vol 7, p 64

1 They raise capital by issuing debentures and preferred and common shares The preferred and common shares are generally sold together in the form of £10 share certificates which, when fully paid for, are converted into preferred and common stock in the ratio of 60 per cent to 40 per cent, or 50 per cent to 50 per cent.

2 They invest their funds in a large variety of securities of both foreign and domestic origin, in order that the law of averages may operate in protecting the principal and the income

3 They limit their investment in any one security, so that no responsibilities of management are incurred

4 They supervise the investment fund continuously much as any conscientious trustee having discretionary powers

5 They endeavor to earn a return higher than that ordinarily received on other investments of comparable safety This is accomplished through

(*a*) The favorable average interest and dividend yield that the trust gets through careful selection and purchase of securities, and that tends to be higher than could be obtained with equal safety if the capital were not sufficient for considerable diversification

(*b*) Cash investment profits that are the result of managerial skill.

(*c*) The proper investment of the continuous accumulation of earned reserves and surplus, built up consistently year by year from net income, resulting in great part from the spread between the fixed cost in capital obtained through issuance of bonds or preferred shares and the actual earnings made by investment and reinvestment of its capital

The development of the investment trust in England, while not spectacular during the later part of the nineteenth century, was steady By 1886 there were 12 such trusts, with a capital of £6,500,000, whose securities were listed on the London Exchange [3] It is estimated that by 1890 there were between 50 and 60 such trusts in Edinburgh and London Although the growth in these institutions was less rapid after 1890, from 25 to 30 investment trusts were organized between 1890 and 1913, and it is estimated that, in 1931, there were 190 or more such companies, with total paid-in capital assets of over £225 million [4]

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[2] See Ottinger, A , and Shea, T J , *Investment Trusts—A Survey of the Activities and Forms of Investment Trusts with Recommendations for Statutory Regulation by the New York State Department of Law,* Bureau of Securities, 1927, p 7 (This publication will subsequently be referred to as *Investment Trusts—N Y Report* )

The success of British trusts is attributable in large part to management The directors of these trusts are generally given wide discretionary powers They may sell securities from their portfolio in order to avoid losses Frequently there are no restrictions imposed with reference to the *type* of security that may be purchased, except that securities that place unlimited liability on the trust may not be purchased However, directors are generally prevented from investing more than a stated percentage (usually 10) of the capital of the trust in any one security In this way wide diversification has been obtained A study of the management of these trusts shows that securities have been selected judiciously, that expenses have been kept down, and that conservative dividend policies have been followed, thus permitting the accumulation of reserves for the purpose of taking care of losses [5]

In Great Britain, the term "financial company" is reserved for the investment company that specializes in the shares of a particular type of undertaking Much foreign, commercial, and industrial financing is undertaken in Europe through investment companies that specialize in the shares of rubber, oil, shipping, mining, electric light and power, and railway undertakings Companies of this nature are known as financial companies or financial trusts At the close of 1927, it was estimated that there were at least 150 such companies with a total paid-in capital in excess of £200 million [6]

**American investment trusts.** It was but comparatively recently that the investment trust appeared in the United States Prior to World War I there were several companies and funds in this country having some of the characteristics of the British trust, but the investment trust movement was not developed until the 1920's

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[3] *Federal Reserve Bulletin,* November, 1920, Vol 6, p 1170

[4] Keane, C P, *Manual of Investment Trusts* (London George Routledge & Sons, Ltd, 1931), pp 1679–1687

[5] Campbell, Edward M, "Management Problems of Investment Trusts," *Harvard Business Review,* April, 1924, Vol 2, p 298

[6] *Investment Trusts—N Y Report,* p 7

The year 1924 witnessed a substantial expansion in the movement, which rose to a high point in the period 1927–1930[7] So rapid was the growth, that the number of companies was estimated to have exceeded 1,000 and had assets of more than $7 billion in 1929 These assets shrank to $2,800,000,000 in 1932 By 1940 fewer than 600 trusts had survived[8] Besides the obvious explanation that values were based on stock market quotations, which shrank tremendously during this period, further shrinkage was due to the retirement of securities by some trusts, complete liquidation of others, and mergers These companies rose with the popularity of common stocks, which they so largely invested in, and a plethora of funds for both investment and speculation They declined with the fall of common stocks, and the disappointing record of investment management in this field

**Fixed trusts.** Investment trusts in this country may be classified in a number of ways, but from the investor's point of view an important basis of classification is the degree of discretion allowed the managers the fixed, or limited management, trust, and the management, or discretionary, trust[9] The former, sometimes known as the unit investment trust, is the simpler type and will be discussed first It offers a fixed list of securities, either stocks or bonds, which are assigned to a trustee for safekeeping, and against which certificates are issued In this way the investor knows definitely what his commitment consists of, and he need not rely upon the judgment and integrity of the management to so great an extent as he does in the discretionary trust The list of deposited securities almost invariably consists of common stocks that are popular and well known at the time the trust is formed As trust shares are sold, the proceeds are invested in these common stocks in the specified fixed proportions The price of the former is determined from day to day upon the basis of the market price of the deposited stocks

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[7] The first investment trust in this country to follow the British type was the International Securities Trust of America, formed in 1921 Under Section 25(a) of the Federal Reserve Act, popularly known as the Edge Act, it is possible to form companies doing essentially an investment business The only investment company so far formed is The First Federal Foreign Trust (*Investment Trust—N Y Report*, p 31) Several investment companies of the acceptance type, however, were also formed See Steiner, Wm H, *Investment Trusts* (New York Adelphi Co, 1929), Chapter III

[8] *Time,* March 25, 1940, p 82

[9] The face amount installment certificate is not discussed here because it represents an accumulation for a definite amount much like the face amount of a life insurance policy It is roughly comparable to the installment stock of the savings and loan association Installment investment plans are also omitted since they are merely a method for the purchase of investment trust shares The collection of the installment payments typically involves extra costs for the investor For fuller discussion and critical analysis see the report of the Securities and Exchange Commission on *Investment Trusts and Investment Companies* Vol I The Origin, Scope and Conduct of the Study, Nature, and Classification of Investment Trusts and Investment Companies, and the Origin of the Investment Trust and the Investment Company Movement in the United States 75th Cong, 3d Sess, House Doc 707 (1939) Vol III Companies Sponsoring Installment Investment Plans 76th Cong, 2d Sess, House Doc 482 (1940) Vol V A Report on Companies Issuing Face Amount Installment Certificates 76th Cong, 3d Sess, House Doc 659 (1939) *i e 1940*

For current practice and legal requirements, see Johnston, Paul A, "Periodic Plan Provides Sound Savings Program," *Barron's,* April 3, 1950, p 19

**Investment qualities of fixed trust. advantages** To the investor the outstanding appeal of the fixed trust is that of diversification Two varieties have been offered Some trusts, especially in the early days, offered a fund made up wholly of the common stocks of a single industry, such as railroads, insurance, oil, or chain stores More popular has been the fund including a variety of companies that are widely and favorably known [10]

**Disadvantages of fixed trust: high costs.** The two major disadvantages of this type of trust that the investor must weigh are (1) the price paid for this indirect diversification, and (2) the inflexibility of the securities chosen

With regard to the cost factor, fixed trusts have shown an addition of from 7 to 20 per cent to the current market value of the securities in the fund in setting the price at which the trust shares were sold to the public In the majority of cases the spread has probably been somewhere between 8 and 10 per cent. Most of this margin represented the cost of selling—that is, commission to the salesman and profit to the distributing group Other expenses would arise from brokerage commissions, office expense, and fees for the depository trustee Some expense might also result later from the cost of operating the trust, this would constitute a charge against income It should be noted, however, that the buyer of common stocks who purchases in very small units will find that the minimum commission plus the odd-lot fee will constitute a substantial percentage of the cost

Abuses have arisen which have made it possible for the distributors of fixed trust shares to profit from operations involving the purchase or sale of securities for the trust fund In an investigation conducted through the office of the attorney general of New

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[10] For a portfolio study of 94 fixed trusts, see *Dun's Review*, July 11, 1931, pp. 10–11, 27–28 Over 70 per cent of these trusts owned stock in N Y Central, American Telephone & Telegraph, Pennsylvania Railroad, Atchison, Topeka & Santa Fe, Consolidated Gas (N Y), Union Pacific, U S Steel, General Electric, and Du Pont de Nemours (listed in order of popularity)

York, the following weaknesses were suggested as common to deeds of trust under which fixed trusts operated at that time [11]

1 There is inadequate protection for the certificate holder against the making of profits by the depositor corporation by putting securities into the trust fund at a higher price than these securities cost the depositor corporation

2 There is no protection to the public in most trust agreements or indentures of the rigid, or quasi-rigid, type against an unwarranted spread between the market value of securities deposited in the unit and the price at which the participating certificates are currently issued to the public

3 In several indentures the depositor corporation is given the initial right to buy securities deposited in the fund held with the trustee, the latter's power to obtain the best possible price on the market being accordingly circumscribed to the probable disadvantage of the shareholders

The enactment of the Investment Company Act of 1940 was, among other things, designed to remedy the abuses of this form of organization The general provisions of the act forbid that those controlling the trust use their position for personal profit Specific rules covering the unit (or fixed) trust require a bank of specified minimum size as an independent trustee to act as custodian of all property and funds to be bound by a suitable trust agreement.

**Fixed trust inflexibility.** A considerable part of the former popularity of the fixed feature was due to the interest in common stocks and the suspicion with which discretionary trusts were regarded because of abuses of management (These will be described later in this chapter ) The weakness of a fixed investment in particular stocks soon became evident, however. Many trusts formed at the end of the decade of the 1920's selected their holdings on the basis of a long and favorable dividend record As a result, railroad and oil stocks were popular However, the railroads suffered drastic reductions of net profits in the years immediately following, and for this reason the distributors of trust shares formed new units to include those common stocks that succeeded their former choices in popularity

To overcome this inability to meet changing conditions, provisions were added to most of the later trust agreements permitting stocks to be dropped, or sometimes permitting new stocks to be substituted for old Thus, a stock might be sold if its dividend were discontinued and the proceeds of the sale distributed among the shareholders Where a substitution provision was adopted, it was usually deemed necessary to provide safeguards with respect to the conditions under which the change might be made as well as to the kinds of stocks that might be substituted These restrictions were in some cases so elaborate as to make it extremely probable that a substitution would be possible only after the stock had so changed in standing that it would have depreciated substantially in price Those trusts that have the power of substitution are sometimes called "limited management," or "semifixed" trusts

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[11] *Investment Trusts—N Y Report,* pp 45 ff Although fixed trusts are not listed, the New York Stock Exchange requires that before a member may be associated with the organization, management, or distribution of its securities, such trust must submit certain information and agree to certain requirements of sound practice *Commercial and Financial Chronicle,* May 16, 1931, pp 3649–3651

**Poor marketability of fixed trust stock** In addition to the disadvantages of cost and inflexibility, the stock of a fixed trust may suffer from poor marketability Since these shares are commonly unlisted, their market depends upon the sponsorship of the distributing houses Should they lose interest in maintaining a market, or go out of business, the holder may find it difficult to liquidate his holdings at a reasonable figure Protection against such a situation may be afforded in part by suitable provisions permitting conversion of trust shares into the underlying stock when presented in suitable multiples, or by provision for liquidation of underlying shares into cash without too great a burden from commissions and fees [12]

**Management investment trusts.** In contrast with the fixed trust is the trust that gives the directors or trustees wide latitude both in the original selection of, and in later substitutions in, the investment portfolio There are three types of such trusts (1) the mutual investment association, (2) the management trust with a capital structure consisting solely of one class of stock; and (3) the management trust with two or more classes of securities outstanding The first two types are generally similar in that both are discretionary and issue only common stock. The "mutual" trust is different in being "open end," that is, it maintains a continuous offer both to sell and to repurchase its shares at prices based on the market value of its portfolio For this reason, its shares are not listed on any exchange It also generally engages outside investment counsel at a specific rate of compensation (usually one half per cent per annum of total assets at market value) instead of hiring its own staff On the theory that the mutual trust is a mere conduit through which income passes from the taxed corporation to the taxed investor, it is exempted from the Federal corporation income tax To qualify for exemption, a "regulated investment company" must distribute at least 90 per cent of its net income in dividends and meet certain other conditions (For other qualifying requirements as to character of operations, limitation on speculative profits, diversification, and capital structure, see the Federal Revenue Act ) The ordinary management trust, or closed-end fund, derives its funds from the sale of blocks of its own securities at irregular intervals Many management trusts have issued no securities other than those sold at the time of their original financing

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[12] For further description, see Ketchum, Marshall D , *The Fixed Investment Trust,* in Studies in Business Administration, published by the *Journal of Business* of the University of Chicago, Vol VII, No 3, 1937 Also see Report on *Investment Trusts and Investment Companies,* Vol IV, "A Report on Fixed and Semi fixed Investment Trusts," 76th Cong , 3d Sess , House Doc 567 (1940)

We shall first discuss the trust that secures all of its capital by the sale of shares of common stock Such companies are really nothing more or less than joint investment ventures under the management of a group of directors or trustees, each shareholder being entitled to his pro rata share in the fund

The advantage of this type of capital set-up lies in the absence of fixed charges, which result from the issuance of bonds, or of contingent but prior charges, which result from the presence of preferred stocks This simple structure means greater investment safety but lacks the speculative glamour that may be had by "trading on equity " If the trust were able to earn on its invested capital at a rate in excess of the charges incurred by the issuance of bonds or preferred stocks, then it should prove profitable for the stockholders to trade on their equity by issuing fixed-income-bearing securities One of the reasons why European investment trusts issue debentures is that excess earning power, over and above the fixed costs of capital obtained at comparatively low rates, makes possible more liberal appropriations to reserves and surplus than can be made when only common stock is issued Up to the present, American trusts have not, until recently, had sufficient investment prestige to permit their issuing bonds and preferred stocks at rates that would be profitable, unless the proceeds were invested in common stocks in a period favorable to appreciation

**Management investment trusts issuing several types of securities** The majority of closed-end American trusts of the management type have nevertheless raised their capital by the sale of preferred shares and bonds, as well as common stock Furthermore, the bonds of investment companies in this country, as abroad, are not generally secured by the deposit of collateral, but are in the form of debentures, which constitute only an unsecured claim against the assets The reason for this situation lies in the added expense occasioned by frequent changes in the collateral held under the deed of trust Such substitutions in collateral are obviously made necessary by the very nature of the trust's business

In British practice, debenture stock—that is, debt capital or bonds—is ordinarily limited by the articles of association to an amount not exceeding the outstanding share capital. Robinson states that fifty per cent is a common limitation, and cites one case of a limitation to one third of the fully paid capital[18] Even in the absence of any surplus, the lowest of these standards would result in assets of twice the debt, while the common limitation of fifty per cent of capital would be equivalent to requiring assets equal to three times the debt American debentures of the better-managed trusts offer about the same security Attention should be given to the kind, as well as the amount of the investments behind an issue of debentures

Under the Investment Company Act of 1940 bonds must be able to show a coverage of three dollars of assets for every dollar of liability at the time of issuance, and common dividends must not be paid that will bring assets below this coverage ratio Preferred dividends must not reduce the coverage below 200 per cent Future indentures must give bondholders the right to elect a majority of directors if the coverage falls below 100 per cent for twelve consecutive months Preferred stock is required to have a 200 per cent minimum coverage upon issuance, and common dividends must not be allowed to bring the coverage below this figure Whenever dividends are as much as two years in arrears, the preferred stockholders must be allowed to elect a majority of directors, subject to the rights of bondholders In the future, an investment company will be limited to a single bond and single preferred stock in its capital structure, but either may be open end and issuable in series

**Legal form of American investment companies.** American investment trusts may be organized either as corporations or as "express trusts" In spite of their name, which implies a trust form of organization, most of the large and well-known management trusts operate as corporations, frequently incorporating in Maryland or Delaware, although there are a number formed under the laws of New York Delaware allows the trust wide latitude in the kinds of business that may be undertaken, has low corporate taxes, and permits meetings of both stockholders and directors to be held outside the state

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[18] Robinson, Leland R, *Investment Trust Organization and Management* (New York Ronald Press Co, 1926), p 51

In view of this common use of the corporate form of organization and the usual association in the public mind of the word "trust" with a fund restricted to conservative investments in bonds and mortgages, the term "investment company" is more appropriate usage than "investment trust"

**Restrictions regarding investments.** The success or failure of a given company will depend in large measure on the character of its management Sometimes restrictions of varying degree may be imposed on the directors or trustees These may be found in the corporate charter or by-laws, if the trust is incorporated, or they may be found in the deed of trust or articles of association, if the fund is organized as voluntary association Where provisions or restrictions are made they may be designed to require a predominance of seasoned marketable securities, a wide diversification of companies, an avoidance of control The maximum single commitment may be limited to a certain per cent of the investment company's assets and of the particular security of the issuer

Too specific requirements, as noted in the discussion of fixed trusts, may at some future time prevent management from adopting policy to changed conditions

After all, it is the character of management that spells the success or failure of the venture With good management no restrictions are necessary On the other hand, the most stringent restrictions are a poor substitute for judgment It is probable that the most desirable limitations are those that aim to establish the broad policies of the trust, but that do not prescribe too narrowly the kinds of securities that may be purchased

The investor is likely to base his decision to purchase the securities of a given investment company upon its record rather than upon the formal restrictions of its charter and by-laws With a variety of companies to select from he may choose companies that emphasize income or appreciation, wide diversification or investment limited to specific industries or special situations, funds committed to common stocks or bonds, or a balance between the two In general, the more important funds have characteristically emphasized well-known, dividend-paying common stocks, have practiced wide diversification, and have invested in bonds, usually Government obligations, chiefly in periods when they deemed the market high, and then only to a limited extent Such policies have been most clearly seen in the leading open-end mutual funds that passed the closed-end companies in 1944 in asset importance [14]

**Investment trust bonds** The agreement under which discretionary trusts issue bonds should not be confused with the declaration of trust or corporate charter under which the organization itself is created Although the indentures or trust deeds under which bonds are issued by investment trusts follow closely the legal forms adopted by other corporations, nevertheless, differences have been made necessary by the very nature of their business Adequate provisions should be inserted in the indenture under which investment trusts issue bonds for the maintenance of a minimum ratio of market value of securities to bonds issued It is immaterial whether the issue is collaterally secured or whether it is a straight debenture In fact, where such a provision is adequately drawn, debenture bonds should be fully as secure as collateral bonds, for a direct limitation is thereby placed on the trust's borrowing powers

Indentures under which collateral trust bonds are issued usually state the ratio of protection afforded by the deposited collateral On the other hand, the indentures under which general obligations or debenture bonds are issued limit the funded debt that the issuing corporation may create, by provisions to the effect that no further debt may be created if the ratio of debt to the book value of assets is thereby reduced below a stated minimum percentage The coverage provisions stipulated by the Investment Company Act of 1940 have already been outlined

The events of recent years have clearly shown that any indenture restrictions are likely to be nullified if the issuer invests all of its funds in common stocks Restrictions that are sufficiently stringent to protect bondholders against loss fully, say to the extent that a banker protects himself in making a collateral loan, would be almost certainly fatal to the debtor in a period of depression. Important reasons for the relatively few failures of borrowing investment trusts have undoubtedly been (1) the absence of provisions making inadequate asset values behind bonds a condition constituting default, and (2) the liquid character of the assets, which permits the use of principal to cover interest charges in a period when income is inadequate, provided that period is not too prolonged This peculiar character of the assets of the investment trust, in marked contrast with the fixity of a railroad's or a utility's assets, explains why the asset coverage and the character of the assets receive such prominence in bond analysis here, whereas in other fields income coverage is emphasized Perhaps too much emphasis is placed upon assets even in this instance because of their generally marketable character Provided the debtor company can earn its fixed charges by a substantial margin even under adverse conditions, depressed assets values need not be embarrassing in the absence of an actual bond maturity Low stock prices may represent only a fleeting and excessive pessimism unjustified by either the long-run or current income of the portfolio

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[14] A compilation by the National Association of Investment Companies showed net assets of $708,683,000 for 39 closed end funds as compared with $653,653,000 for 91 open-end funds at the end of 1943 On Dec 31, 1949, the corresponding figures for net assets were $794,371,000 and $1,973,547,000, respectively

Since 1943, the more popular form of investment company has been the mutual open-end fund, which avoids the issuance of bonds and preferred stock and employs an all-common-stock capitalization

**Cost of raising capital for management trusts.** In the London and Edinburgh trusts the cost of raising new capital has frequently been less than 2 per cent The age of such trusts, their investment position, and their practice of selling issues without having them underwritten tend to lower the cost of marketing their securities In this country the cost of raising capital for management trusts has ranged between 3¼ per cent and 10 per cent [15]

The open-end mutual fund typically maintains a continuous sales program partly for expansion but partly to resell shares that are returned to the company for repurchase by it A common charge against the amount paid in by the investor of 7½ per cent, or thereabouts, is used to compensate the organization devoted to promotion and sales and the dealer who makes the particular sale [16] The balance goes to the investment company for investment This type of company stands ready to repurchase its shares at any time for substantially the liquidating value at the time the shares are sold back Thus, if an investor sold back within a few days he would be likely to lose the amount of the sales "loading" margin Because of this element, one should not make a commitment in this field unless he plans to hold it long enough to recover the charge from income

Some have been critical of the sales expense in spite of its moderate amount Their position seems unrealistic Our leading thrift institution, life insurance, devotes a larger fraction of premiums from its individual policyholders for sales expense than the 7½ per cent noted above Moreover, this charge compares not unfavorably with the brokerage costs involved when an individual buys odd lots of stock directly in amounts of less than $500 The brokerage costs of the investment fund are much smaller because its purchases are for large sums and may not be required for every new stockholder, since the latter may merely buy shares previously repurchased from an existing stockholder Merchandising costs are an essential part of our private enterprise system, even in the field of finance, and the only question should be whether they are reasonable and not excessive

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[15] *Investment Trusts—N Y Report,* p 44

[16] This charge is reduced by some funds in the case of large purchases of its shares Thus, it might run between about 5 per cent on single purchases of $25,000 to as low as 2 per cent on purchases of $200,000

Actually, a few open-end funds are available where no, or only a nominal (less than one per cent), expense loading is added to liquidating value in determining the selling price of new shares These exceptional funds may omit the charge because they have reached a size beyond which they do not care to grow or because they are affiliated with investment counsel organizations, which find them a convenient device for handling accounts that would be too small to handle individually By handling them through a common fund, no individual attention is necessary and the fund is charged with the regular continuing fee for investment management

There are also the shares of the closed funds, some listed on the New York Stock Exchange, which often sell for less than their current liquidating value Such a discount results from the lack of merchandising effort after the original issue of securities In view of the excellent record of some of these funds, they may constitute an investment bargain for the investor familiar with the situation

**Operating costs for the service of the investment company.** Probably more important than the initial sales charge are the subsequent operating costs because of their continuing effect Often their amount is almost ignored in discussions of the subject The cost of senior capital in the form of bonds and preferred stock has already been mentioned Strictly speaking, they are financial items to be considered as a part of the "trading on equity" question treated later, rather than an operating cost

The major operating cost is usually the fees charged for management of the fund or the salaries of the staff employed to care for that function In the case of the fixed trusts, where management is not provided after the original selection of the list, this expense should be absent For them, there should be little expense save for the handling and care of the securities [17] Where the fund is managed as is true for all but the relatively unimportant fixed trust, there are the costs for research and management If the fund is small it may be at a disadvantage in maintaining a staff for administration and research For this reason some of the closed-end and most of the mutual open-end funds employ outside investment counsel for annual fees that are usually fixed as a per cent of the assets in the fund

The expense ratios of a group of 80 investment companies averaged 0 76 per cent of assets in 1948, with variations from a low of 0 36 per cent to a high of 1 92 per cent [18] Lest the importance of these per cents be underrated, the reader should think of them in relation to the rate that the investment company's portfolio might earn If such a company were able to earn 6 per cent before expenses, an expense ratio at the average figure of 0 75 per cent would consume one eighth or 12½ per cent of the total income, from a gross return of 5 per cent, such expenses would take 15 per cent, and from 4 per cent, 19 per cent or almost one fifth These figures explain why it was stated earlier that operating expenses are likely to merit greater attention than the original sales costs as they affect the price the investor pays for the service of this form of organization

As for actual net return after all expenses, the average yields from ordinary income, excluding capital gains, of a representative group of investment companies in 1948 was 5 3 per cent and in 1947, 4 4 per cent upon year-end asset values at market [19] Since this per cent is the relation between dividends and market price in the given year, it will vary with stock market fluctuations and between companies with different expense ratios (A company that does not qualify as an exempt regulated investment company under the Internal Revenue rules would have to include a corporate income tax among its expenses This factor affects the past record of some companies now exempt )

Too much emphasis should not be placed upon this expense ratio by itself The actual net results over a period of years are the vital consideration A high expense ratio might be coupled with an unusually excellent record of high gross return that would more than offset the extra expense However, in the absence of special performance, an above-average expense ratio is unfavorable just as a low ratio is deemed favorable In measuring performance, the investor should, of course, include appreciation as well as dividend income

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[17] The original trustee's expenses are often taken care of at the time the certificates are sold The Investment Company Act of 1940 requires that fixed trusts provide that trustees be entitled to reimbursement for expenses out of the trust property Usually a definite time is designated when the underlying collateral may be sold or distributed, and the trust may be wound up or continued for a further stated period upon payment of a specified sum to reimburse the trustee for further services

[18] Wiesenberger, Arthur, *Investment Companies*, 1949, pp 114, 205 This source reports other valuable analytical statistics by companies

[19] *Ibid*

**Analysis of investment company record.** A study of an investment company should include (1) the statistical record of the past both for (a) ordinary investment income and for (b) any appreciation whether realized or unrealized, (2) the capital structure in those cases in which bonds or preferred stock have been issued, (3) investment policy as reflected in portfolio from time to time, and (4) the management Because the usual primary objective is investment, the ordinary and regular income receives first attention As in any other field of corporate securities the amount and stability of this income will be studied over a period of years Where the company is young and lacks a record, something of probable performance is usually inferred from the type of existing portfolio and statements of policy Future policy is more predictable when the investment company has a demonstrated record

Two differences from other kinds of business should be noted The income is predominantly dividends Consequently, the ultimate earning power as it is found in the reports of those other companies whose shares are held by the investment company is not reflected in the financial statements of the latter For the reason that the valuation of income in this field is essentially a capitalization of dividends rather than of ordinary operating earnings, the problem is unique This peculiarity explains why so much emphasis is placed upon liquidation value per share rather than earnings per share The liquidation value found from a balance sheet in which assets are taken at market rather than cost, is a method of using the market's estimate of the worth of the composite earning power represented by the various securities held in the investment company's portfolio

The second difference between the investment company and most other fields of business is the common practice of paying out substantially all earnings, including realized capital gains, as dividends each year This substantially complete pay-out (90 per cent) is necessary to gain exemption from the ordinary corporation income tax as a "qualified investment company" Consequently, growth in value per share cannot arise from retained earnings Appreciation, when it arises, can result only from the appreciation of the securities owned, that is from the retention of earnings by corporations in which common stock is owned or the market fluctuation of such securities

Complete pay-out is in line with the function of an investment agency, which is designed to put its shareholders' money to work for them, pay them all income, and let them decide when they may wish to accumulate income by reinvestment Some regard capital gains distributions as improper on the grounds that they represent a return of principal rather than a special form of irregular income.[20] Those who regard such receipts as principal should reinvest rather than spend them Unfortunately, a personal income tax must be paid first So only a part of the capital gains dividend will be available for reinvestment Even if capital gain be regarded as income, the tax on a capital gains dividend from an investment company erroneously assumes an identity between the position of the investor and his investment company Suppose the investor pays $50 for a trust share, which, for the sake of simplicity, is further assumed to equal liquidating value Assume further that of the $50, $40 represents portfolio cost to the company and $10 unrealized market appreciation When and if any part of this $10 paper profit is realized by the company and distributed as a capital gains dividend, the investor really receives principal He pays a capital gains tax nevertheless

The study of the irregular gains and losses that the investment company realizes from time to time when securities are sold has little independent significance Such items reflect only a part of the fluctuations in portfolio value This latter is best found in the changes in liquidation value from year to year, suitable allowance being made to include realized gains that have been paid out Because of capital gain distributions, the ordinary chart of market price fluctuations used for other kinds of corporations is not comparable with that of an investment company share unless the influence of the distribution is added back into the picture

A measure of common stock performance that would include both dividend income and appreciation may be obtained in the following way (1) add dividends to any increase in the common stock liquidating value for the year, and (2) subtract any capital paid-in (whether stock or surplus) If surplus decreases, a subtraction would be made, and any stock retired would be treated as an addition at its cost price When the net result of each year is compared as a percentage with the liquidating value of the common stock at the beginning of the year, a valuable measure is obtained Sometimes this test is applied to the income and value change of the total assets rather than to the common stock value, in order to eliminate the effect of trading on the equity, which is discussed below as "leverage "[21]

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[20] This matter is discussed by Young, Andrew B, "A Dissent on Capital Gain Distributions," *Trusts and Estates,* May 1949, pp 280–282 and Shattuck, Mayo A, "Further Comment on Capital Gain Distributions," *Trusts and Estates,* July 1949, pp 429–430 Discussion of the analogous situation in the case of "rights" may be found in Guthmann, H G, and Dougall, H E, *Corporate Financial Policy* (New York Prentice-Hall, Inc 2nd ed, 1948), p 353

Because such tests of performance that include appreciation have become common, an understanding of their limitations is desirable Over short periods comparisons are unreliable because of the influence of temporary and unimportant factors Even over long periods care is necessary in interpretation Different objectives are sought by different companies Thus, if income were the chief consideration, the portfolio would be heavily committed to stocks of older companies that pay out a more substantial part of earnings than younger growth companies The latter companies fit best in a portfolio where appreciation is more sought than current income Companies that specialize in the stocks of a single industry are in a special class A company that seeks to profit from cyclical fluctuations in the market may show less ordinary income during years in which part of their funds are switched from common stocks into liquid Governments Ordinary income and appreciation are both likely to be somewhat lower but more stable for the "balanced fund," which invests in high-grade bonds as well as common stocks

Any comparison of results may be greatly influenced by the selection of the initial and final years used for the comparison For this reason, some prefer a period of a number of years that begins and ends on dates at which the general stock market averages are substantially unchanged [22] During a period in which stock market rises have predominated, the company with the more speculative portfolio will tend to show the greater gains and in declining markets, the greater losses

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[21] For such a study of portfolio performance of the larger closed end investment companies see articles appearing from time to time in *Barron's*, as Johnston, Paul A , "Closed end Funds Set New Record in Assets," January 30, 1950, p 27, and the same author's "Year-end Reports Show Still-growing Pattern," on open-end funds, February 20, 1950, pp 25–27 Also see S E C report on *Investment Trusts and Investment Companies*, Vol II, "The Statistical Survey of Investment Trusts and Investment Companies," 76th Cong 1st Sess, House Doc 70 (1939), Chap. VI, "Performance of Large Management Investment Companies Proper, 1927–1937" and Mennis, E A and Blair, R L , *Investment Trusts and Funds from the Investor's Point of View* (Great Barrington, Mass American Institute for Economic Research, 9th ed , 1949)

Changes in character and policy may make prospects unlike the record for the past An investment company like Adams Express Company may retire all its bonds and become a nonleverage, and therefore a more stable, performer It is always possible that a change in investment policy or a change in fortunes will make a company more or less successful in the future than in the past

**The leverage factor** The common stock of investment trusts having senior capitalization is expected to appreciate or depreciate more rapidly than the market This condition may be explained in part as follows Suppose a trust is organized with $10 million in debentures and 50,000 shares of no par common stock worth $50 a share, or a total capitalization of $12 5 million This money is invested, and in a period of time shows a net increase, after all expenses, of 20 per cent The net assets will then total $15 million The holders of the bonds are entitled only to the original $10 million that they contributed to the enterprise, but the owners of stock now have an equity equal to $5 million Thus, while the total assets of the trust have increased only 20 per cent, the common stock has doubled in value Had a decrease of 20 per cent in the total assets occurred, instead of an increase, the equity of the common stockholders would have been reduced to zero It may be noted that the leverage factor as applied to investment companies is but a specific instance of the more general case discussed under the subject "Trading on the equity "

A simple measure of leverage is the ratio of the portfolio to the common stock equity Since the claims of the holders of bonds and preferred stocks are constant, each dollar of change in portfolio value is reflected in the common stock equity value If the portfolio is twice the value of common stock, the liquidating value of the latter will move twice as rapidly as the market value movement of the former In the illustration previously given, this leverage ratio was five, as may readily be seen from a simplified balance sheet

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[22] The most satisfactory statistical data would consist of annual rates of gain which could then be cumulated for any desired period and could at the same time be broken down for comparative annual analysis with other companies See Jackson study described on page 153

| *Assets* | | *Liabilities* | |
|---|---|---|---|
| Investments | $12,500,000 | Bonds | $10,000,000 |
| | | Common Stock | 2,500,000 |
| | $12,500,000 | | $12,500,000 |

As the portfolio rises in value, however, and the common stock equity grows larger in relation to the debt, the leverage declines with the fall in risk The reverse is also true At times the liquidating value of the common stock may decline below zero, and if a recovery were impossible, the stock would be worthless Actually, however, because of the attractions of the leverage factor, such stocks very often have a market value that will fluctuate with the prospects of a rising stock market The utility of such high-leverage stocks, when they are suitably supported by a common stock portfolio and sufficient income to carry current charges, is obvious during a period when inflation is threatened In such a situation the character of the portfolio, as well as the degree of leverage, must be examined These high-leverage stocks also serve as excellent speculative media for general market movements Because of leverage they tend to move more widely percentagewise than an average of ordinary stocks and because of their widely diversified portfolio they are more certain to move with the market average than any individual stock

**Market for investment company stocks.** The most obvious market for the stocks of investment companies is among persons of moderate means who feel it desirable to have an interest in the field of common stocks The expanding importance of this middle-class group in the field of investment makes such participation likely. For them, the investment company offers the convenience and safety of continuous investment management and broad diversification The person of very limited means may need to keep any savings liquid and available for family emergencies The fixed-value, cashable investment in the form of a bank deposit, a U S Savings bond, or a savings and loan share appears most suitable When a more permanent investment is wanted and the risk of price fluctuation is less important than the possibly higher income and hedge against price inflation offered by investment company shares, the latter is fitting Because of the inflation hazard to persons living on a fixed income, such as would be derived from a pension, an annuity, or bonds, shares of an investment company can offer some relief from a rising cost of living

Some nonfinancial institutions devoted to charitable or religious purposes, whose purpose is to meet a budget that fluctuates with prices, have bought investment company issues They either have insufficient funds to justify a staff for investment supervision or prefer not to burden administrative officers and trustees with the responsibility for the financial decisions and operations involved A number of states permit trustees to invest funds for individual beneficiaries in the shares of investment companies

**Future of the investment trust.** The growth of the investment company at home and abroad leaves little doubt as to its permanence as an institution of finance Many have failed to meet the expectations of their sponsors The ultimate success of any trust depends largely, if not entirely, on management, and management is a personal element that varies widely

The individual investor will find an analysis of investment trust securities the more difficult on this account Management cannot be measured and appraised on any purely statistical basis However, after a period of years, management will write a record into its financial reports, which can tell much of temperament, integrity, and investment ability

The ultimate success of the trust will depend, of course, on the wise selection of securities and their continuous study This does not mean that only securities of the highest grade should be purchased There would be little profit accruing to a trust that purchased nothing but United States bonds or high-grade state and municipal bonds The real profits will be made through the purchase of securities that, for one reason or another, are selling at prices below their actual worth, or that have good possibilities of future enhancement

Some deplore the common practice of these companies investing chiefly in the highly marketable stocks of the largest and best-known business corporations Such investment policy, however, makes it easier for the investment company to dispose of its own shares to the public This consideration is vital for an institution that is still comparatively young and in need of establishing public confidence The need is indicated by the hearty cooperation of the industry in planning adequate regulation under the Securities and Exchange Commission as recently as 1940 in the Investment Company Act of that year This act represented the consensus of responsible industry leaders in such provisions as the prohibition of transactions between the regulated investment companies and their officers, directors, or certain other "affiliated persons," in which their self-interest might conflict with the company's interest Investment bankers and brokers are prohibited from constituting more than a minority of the board of directors Persons guilty of security frauds are barred as officers and directors Complete disclosure of pertinent information to stockholders is required Any basic changes in the company's status, as from a diversified to a nondiversified portfolio, require the approval of a majority of outstanding voting securities

Since the enactment of this legislation, a resurgence of growth has taken place—notably among the mutual, open-end funds With their standing agreement to repurchase shares at liquidating value upon the demand of the investor, a marketable portfolio is necessary [28] With the common stocks of well-known companies available at relatively high yields as compared with bonds, a search among less seasoned stocks has been unnecessary Should investment companies grow to the point where prices of leading stocks are driven up and yields go down, less-known issues might become more attractive However, these latter stocks with their lesser marketability are more appropriate for the closed-end company

In any discussion of social needs for capital, it should be remembered that the amount of ownership funds needed for new ventures is always small in relation to the whole body of equity securities Furthermore, the bulk of growth in stockholders' investment takes place through retained earnings of existing successful companies, small and large, rather than new issues

By directing a flow of funds into the stock market so that existing stocks will sell at prices reasonably high relative to earnings and property investment, the investment companies perform a valuable function Owners of existing business will be more willing to put back earnings in their business and to buy new stock issues if a good market exists for the shares that represent such investment Ownership investment in business ventures is made attractive for many by two chief factors a hope of reasonable return upon their investment and a market where they can, when and if they wish, recoup their investment With the increasing pressure of taxation upon the wealthy, the investor of lesser means has grown in importance Income taxes take the bulk of ordinary income for the wealthy, and his principal is taken by gift and death taxes The investment company is a logical institutional device for making common stock investors of a growing group of middle class investors

Because of the fluidity of funds invested in marketable securities any factor that adds to the general supply of funds makes it easier for all business to obtain money Buyers for new issues of new companies can be found among investors willing to shift out of existing securities Without any stock market, every business seeking funds would be obliged to locate newly saved funds when it sought to sell a new issue of securities So the investment company may come to serve an important middleman function in the field of ownership investment, just as the bank, the life insurance company, and the savings and loan association do in the field of debt investment

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[28] However, some have invested indirectly as through American Research & Development Corporation, a concern specially organized to invest in venture capital companies Television Fund has invested in a new industry, although leaning heavily upon well-known companies that have a secondary interest in television

# 17

# Investments Secured by Real Estate

The most common form of security issued against real estate is the real estate mortgage This type of security has been known for many centuries Actual records unearthed in Mesopotamia show that as early as 2100 B C, mortgages on real estate were given to secure loans The basic uses to which land is put, the dependence of man on land for meeting his every need, the relative stability of values found in land and real estate, except in areas where speculation has been overdone, make real estate mortgages one of the soundest and most stable of all investments

Mortgages may be classified in several different ways One distinction is between mortgages on improved property and those on unimproved and unproductive property, although the fact that property may be only partially or inadequately improved sometimes makes such a distinction difficult The important difference is that unimproved property yields no income, whereas improved property is capable of producing an income Consequently, the taxes and mortgage interest of the former must come from the owner's resources, while the income from the latter takes care of carrying costs Income-producing property can help to carry expenses if the mortgage is defaulted and, in general, such property has a more definite and steady value and is more readily marketable However, where the buildings are worn-out and dilapidated the income may be so small and uncertain as to make the property unimproved for practical purposes [1]

Mortgages may also be classified on the basis of the uses to which the mortgaged real estate is put Property may be farm or urban, and the latter may be used for residential or business purposes Residential loans may be on one- or two-family houses, or on apartment houses Business property loans may be secured by stores, lofts, offices, garages, hotels, motion picture theaters, or even small factories

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[1] See also p 491

Although the convenient distinction between a mortgage and a bond issue is whether it is a single piece of debt or a debt divided into convenient denominations for a number of investors, the more importance distinction for investment analysis is the question of whether the property used as security is small enough and suitably located so that another tenant or purchaser can be readily found in the event of the insolvency of the borrower If it is, the lender can depend upon the nature and value of the property, if not, he must look chiefly to the credit and earning power of the borrower Practically, sound investing looks to both factors and the matter is one of emphasis

In general, the owner-occupied home enjoys the greatest favor as mortgage security Such an owner has a strong incentive to avoid foreclosure A sentimental factor, as well as the need for shelter, is present This influence may have been weakened in many instances in the case of mortgage loans insured by the Federal Housing Administration and the Veteran's Administration where down payments were small and sometimes regarded as a kind of bonus to obtain housing during the postwar shortage In the case of larger properties, the borrower is likely to default soon when the rental income becomes insufficient to carry the mortgage and other costs Furthermore, the marketability of property diminishes as its size increases On the other hand, the care and expense of handling a few large loans is less than for a number of small mortgages

While a somewhat higher risk attaches to loans on "special purpose" property, such as garages, clubhouses, hospitals, and hotels, some borrowers have had a favorable experience with churches and small business locations such as garages and laundries This experience may reflect special care in the selection of borrowers as well as in appraisal of property The data on the following page show a portion of the experience of one mortgage lender

The relative safety of real estate mortgages has been recognized and explains why many states have made them legal investments for savings banks, trust funds, and life insurance companies Thus Massachusetts and New York both permit savings banks to invest up to 70 per cent of their deposits in first mortgages on real estate located within the state, such mortgages not to exceed 60 per cent

PROPORTION OF FORECLOSED AND TROUBLE LOANS BY THE HOME TITLE AND GUARANTY COMPANY OF BROOKLYN 1906–1934*

| *Type of Security Mortgaged* | *Total Amount of Loans Made* | *Trouble Ratio*† | *Loss Ratio* |
|---|---|---|---|
| Dwellings | | | |
| One family | $44,376,000 | 4 87 | 0 59 |
| Two-family | 26,938,000 | 9 68 | 1 30 |
| 3- and 4-family | 8,902,000 | 9 16 | 2 30 |
| 5- to 8-family | 3,772,000 | 10 92 | 2 36 |
| More than 8-family | 18,102,000 | 30 86 | 2 72 |
| Stores | | | |
| Without apartments | 2,065,000 | 26 82 | 6 17 |
| With 1 to 4 apartments | 12,695,000 | 16 40 | 4 97 |
| With 5 to 8 apartments | 1,561,000 | 32 44 | 6 35 |
| Factories, laundries, and warehouses | 3,119,000 | 4 93 | 1 42 |
| Special purpose (clubs, institutions) | 3,452,000 | 32 54 | 6 77 |
| Vacant land | 4,160,000 | 10 46 | 1 04 |

* Source Lodge, Edgar A , *A Mortgage Analysis, 1906–34* (Brooklyn, N Y Home Title & Guaranty Company, 1935)

† Ratio of foreclosed and trouble loans to total loans on same type of property

of the value of pledged real estate If loans are made on unimproved and unproductive real estate, the amount lent thereon must not exceed 40 per cent of the appraised value

In contrast with the safety of the principal and the income of this type of investment, there are certain disadvantages Mortgages lack marketability and are often in inconvenient denominations, which explains their more frequent purchase by institutional rather than by individual investors A substantial amount of detail is required in supervision The mortgagee must see to it that adequate insurance is kept on the property, that taxes are properly paid, and that the property is not allowed to depreciate There is often some difficulty in the collection of interest It is also necessary to be familiar with property values in the locality where loans are being made or to rely on independent appraisals

**Individual mortgages and mortgage bonds distinguished.** Originally, the mortgage was an actual transfer of property to the lender, which conveyance was kept "dead" (mort) so long as the debtor met the terms of the agreement The mortgage of present-day practice, whatever its legal form, may be regarded as a twofold instrument (1) a promise by the mortgagor, or borrower, to pay a certain sum of money with interest and (2) a pledge of property to secure the payment of the debt to the lender, or mortgagee In the event of failure on the part of the mortgagor to carry out his part of the agreement, the mortgage is in default The mortgagee is then obliged to go through formal, and sometimes expensive, proceedings, known as foreclosure, to enforce his rights through the seizure of the property

In the mortgage bond issue, a mortgage is made out to a trustee, and the promises to pay (bonds) are held by the several investors Instead of taking direct action, as with individually owned mortgages, bondholders must have the trustee act in their behalf to enforce mortgage covenants or carry out foreclosure Since such action requires time and expense, the bondholder is at something of a disadvantage as compared with the mortgage investor, as will appear more fully in the later discussion of the former field of investment The ordinary mortgage, such as is found in the financing of homes, will be considered first

**The mortgage agreement** The mortgage terms will include the amount of the loan, the times for the payment of interest and principal, the rate of interest, the covenants whereby the debtor agrees to protect the mortgagee by keeping up repairs, paying taxes, and carrying adequate insurance Failure to abide by these terms means default and the right of the creditor to seize the property by proper legal steps The interest rate must not exceed the maximum set by law[2] The actual rate will vary from place to place with local lending conditions and, in most cities, with the quality or risk factor After covering certain details that go with the making of the mortgage, we shall discuss the two most important aspects of mortgage safety, (a) the restriction of the loan to a reasonable relation with the value of the property, and (b) the terms of repayment

**Details in handling mortgages** In practice certain details should be attended to at the time the mortgage is taken The absolutely essential details are (1) fire insurance, (2) title insurance, and (3) registration

*Fire insurance* A sufficient amount of fire insurance should be placed on the property to protect the mortgagee Where the mortgaged property consists of land only, fire insurance is not necessary In other cases it is customary to require policies with approved companies at least equal to the amount of the mortgage, otherwise the mortgagee is liable to suffer a serious loss in the value of his underlying security Generally somewhat more is required to cover possible delinquent interest or possible outlays, as for taxes, that the mortgagee may have to make to protect his loan [3] Fire insurance policies should be held by the mortgagee, and attached thereto should be a mortgagee's clause, properly assented to by the company issuing the policy, in which the mortgagee is accepted as beneficiary to the extent that his interest may appear under the mortgage [4]

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[2] Many states have usury laws specifying the rate of interest that may be charged on loans to individuals The stated rate of interest in the loan does not always equal the *effective* rate to the investor because the mortgage may be acquired for less than its face value The real test is Will the contract, if performed, result in the lender's receiving a rate of interest greater than that allowed by law, and is this result intended? Usurious contracts are void and unenforceable in some states In other states a usurious contract may be enforceable up to the legal rate of interest It is very important, therefore, that the investor acquaint himself with the usury laws of the state in which he proposes to take mortgages of this kind, to see if they conflict with such laws Corporation borrowers cannot plead usury In some states there are exceptions to usury laws in the case of specified types of loans

*Search and insurance of title* It is also important that the mortgagee be assured that his debtor has a proper title to the property in question This matter may be determined with reasonable accuracy by a lawyer's examination of the records at the registry office at which title history of the given land is kept Such an examination will show whether the mortgagor has a clear title, and what liens, if any, are registered against the property The lawyer's search will probably reveal any obvious defects in the title, but is by no means always adequate It is far better, where it is possible, to have the title insured by a reputable title company Such companies issue title policies not only to mortgagees, insuring their interest in the title, but to the owner as well

It is customary for such companies to guarantee (1) that the title is marketable, (2) the exact condition of the title in respect to other liens, (3) that all costs in connection with litigation over the title have been paid, and (4) that the title company will protect against any loss that may arise from a defect in the title The fees charged by such companies are nominal and are paid once and for all when the policy is issued [5] The mortgagor is customarily required, when applying for the mortgage, to agree to furnish a title policy, or to pay the necessary legal fees in connection with a title examination

In some states the Torrens certificate, which is a guaranty policy issued by the state, is increasing in popularity[6] Because these certificates are issued by the state, whose laws govern title, an absolute and undefeatable title is created for the persons to whom they are issued, once legal formalities have been complied with, whereas the title insurance policy of the private organization merely indemnifies against money loss up to the amount of policy in case any flaws in the title should appear

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[3] Some lenders require insurance up to the full value of the property, although the mortgage may be only 60 or 70 per cent of such value This requirement might be essential where the policy contains a coinsurance clause For a description of coinsurance, see Riegel, Robert, and Miller, J S, *Insurance Principles and Practices* (New York Prentice Hall, Inc, 3rd ed, 1947), pp 397–404

[4] See *ibid*, pp 339–344, for a discussion of mortgagee provisions, including the standard mortgage clause

[5] The customary fees for a single policy are one half of one per cent of the face value of the policy plus a base fee of $15 on all policies under $40,000 For each $1,000 over this amount, the fee is $2 50 per $1,000

*Registration* As soon as the mortgage is executed and passed, it should be recorded This registration customarily takes place at the county clerk's office in which the land records in question are kept For this reason many mortgage transactions are consummated at this office, in order that the registration may be effected at once Failure to record a mortgage does not make it invalid, it is true, but such failure cannot be held against a third person who subsequently acquires a claim on the property, on the assumption that there was no other lien In other words, assume that individual *A* has an unrecorded mortgage on a certain piece of property now owned by *B* Although *B* is fully aware of *A's* mortgage, he decides to execute another mortgage to *C* *C*, having no personal knowledge of *A's* mortgage, examines the records and finds them clear, he then takes another first mortgage on *B's* property, which he immediately records *B* then becomes bankrupt, and *A* finds out that another first mortgage has been placed on the property and has been properly recorded His mortgage becomes, in effect, a second mortgage It is true that *B* acted fraudulently, but this fact is of no financial aid to *A* if *B* is insolvent *A*, in fact, suffers from *B's* fraud because of his own neglect in not recording his mortgage

**Importance of appraisal methods.** Up to this point, matters of detail that should be borne in mind when investments in mortgages are made have been considered Important as such details are, they do not involve the fundamental elements of risk to be found in real estate mortgage investments The first investment risk, at least from the standpoint of importance, lies in the appraisal, on the basis of which the loan is made It is customary for savings banks to loan up to 60 per cent of the appraised value of urban property In the case of farm loans the mortgage is usually restricted to 50 per cent of the value of the land and 20 per cent of the value of the improvements These limits may be considered as conservative Nevertheless, some institutions make loans up to two thirds of the value of the property Savings and loan associations, which for the most part loan on residential properties occupied by the owner, are permitted in some jurisdictions to grant mortgages up to 75 per cent of the value of the property Federal savings and loan associations also are permitted to lend up to this limit However, these associations require borrowers to pay off these loans on a monthly repayment plan that amortizes the whole loan over a period that until recently ran approximately twelve years The higher percentage loans permitted for mortgages insured by the Federal Housing and Veterans' Administrations are discussed later in this chapter

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[6] A discussion of the various methods of checking title and their comparative use in the various states is given in Gage, Daniel D, Jr, "The Land Title Underwriter," *Journal of Land and Public Utility Economics* XIV 56 (Feb, 1938)

**Appraisal of real estate for mortgage purposes general** Appraisals that are made for mortgage purposes should center on market values If the mortgage is to give proper security to the mortgagee, the underlying property must have a market value in excess of the amount of the loan It may be argued that so long as the income from a mortgaged income-producing property is sufficient to pay expenses, interest, and amortization, market value is incidental The answer is that if the income honestly derived from the property is sufficient to meet these requirements with a reasonable margin and is permanently established, the property will have a value equal to or in excess of the amount of the loan But cases have been known where temporary "dummy" tenants, who pay exorbitant rent to supply a fictitious value for financing purposes, are put in occupancy Again, during a period of housing shortage, rents may be forced temporarily to a high level so that they may appear to justify a market value considerably in excess of replacement costs Such values, even when established by actual sales of property, should be checked with care

No single method of appraising real estate for mortgage purposes can be established that will be correct for all the different kinds of real property For example, the value of store property is often computed on the basis of gross rental, office buildings, as well as some of the larger apartment houses, are appraised on the basis of net income, whereas unimproved land may have no present income at all. Single-family houses of the better type are almost invariably purchased and held for residential, not for rental, purposes, consequently, they are not readily subject to the income test of value The science of appraisal is indeed a subject by itself, and all that we can do at this point is to indicate in a general way some of the appraisal methods in common use[7] To arrive at a valuation various methods are used (a) comparison with the prices at which similar properties are being sold currently, (b) cost of replacement with allowance for depreciation, and (c) capitalization of rentals

**Appraisal of residential property. comparison of sales prices** The simplest method of appraising residential property is that of inspection and price comparison That is, the appraiser inspects the property, notes its general characteristics, and compares it with other property similarly situated and constructed that has recently been transferred, or which is on the market at the time the appraisal is being made Real estate firms that operate in the area in which the property is located generally have a record of sales of similar property Where no actual sales records are available, it is often possible to approximate the sales price by reference to the revenue stamps put on the deed of properties that have recently been sold

There are serious objections to this method of appraisal, however, in that no means are provided for an accurate check on all the various items of value that go into the building For instance, the size of the building, the number of rooms, the room layout, the architectural plan, the style of plumbing, the kind of wood used for flooring, the type of heating plant, the roof, the dimensions and location of the lot, the nearness to undesirable structures, the age of the building—these, among other matters, all have their effect on value The problem of the appraiser is to give proper weight to all these factors

**Separate appraisal of land and buildings.** A more refined method of appraising residential property, therefore, begins with an analysis of land value, to which is added the cost of constructing the improvements less proper depreciation for age and obsolescence The most accurate basis for land valuation in such cases is the record of recent transfers of land in the neighborhood in question, with proper adustments for corner locations, and for other special factors that may be involved. Land for residential purposes may be valued on a square-foot or a front-foot basis, although more commonly the front-foot basis is used, and proper correction is made for variations in depth and nearness to corners.

There are a number of tables that are commonly used to make adjustments for variation in the depth of lots In New York, the Davies rule or the Hoffman-Neill tables are frequently employed In Cleveland, the Somers table prevails In fact, there is a slight adjustment in the tables used in different sections of the country to take care of variations in local customs [8]

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[7] For a detailed treatment of the subject of real estate appraisals, see Babcock, Frederick M, *The Valuation of Real Estate* (New York McGraw-Hill Book Co, 1932).

Lots situated on a corner, or one lot in from the corner, are generally more valuable than lots situated in the middle of the block The customary rule is to add to the value of a standard lot facing a particular street an additional 50 per cent to determine the value of a corner lot This rule applies more particularly to lots used for business purposes than to those used for residential purposes, although corner locations are often more valuable for residential purposes than are interior lots The added value in such cases will depend on the local situation, since there is no general rule for determining the added allowance to be made

The matter of plottage value must also be considered in localities that are especially adapted to apartment houses or to large office or commercial buildings In such areas a single 50- or 100-foot lot may be inadequate for the erection of the best-adapted structure Two, three, or more lots must be combined By reason of the fact that, in such localities, the larger area can be developed or improved to better advantage, there is an added value when lots of suitable size are combined into a parcel Where there has been a successful grouping of small lots in this way, it is customary to appraise the aggregate area by adding to the total of the values of the individual lots a percentage, usually 10 per cent, in order to arrive at the value of the larger plot

The process of assembling lots may also create a sort of "nuisance" value for one or two of the individual lots in the area of proposed plottage Thus, where an operator or builder has acquired all but one, or possibly two, of the individual lots necessary for the erection of a properly planned building, he may be compelled to pay a higher price for the remaining parcels Although such value is often created in situations of this kind, it is dangerous to use it extensively as a basis for mortgage loans, for, in the event of a change in the builder's plans, there may be a collapse in this so-called nuisance value

**Methods of appraising buildings** The next step after the land has been valued is to value the improvements thereon Here the appraiser must concern himself with the suitability of the improvements for the location. Where the land and the improvements thereon bring a maximum rent, or, in the case of residential land, where the type of building (considering cost, architectural layout, and nature of structure) is adapted to the lot, the land is said to be adequately improved. Where the land is adequately developed—that is, where the best-adapted structure is on the land—it is safe to add to the land value the estimated cost of the structure less depreciation.

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[8] The reader will find further information on this subject in McMichael, Stanley L , *McMichael's Appraising Manual 4th ed* (New York Prentice Hall, Inc , 1951) For a criticism of such tables, see May, Arthur A , *The Valuation of Residential Real Estate* (New York Prentice Hall, Inc , 1945), p 208

Where the land is not adequately improved, it is necessary to estimate the total value of the land and buildings combined by a comparison of the sales prices of other property in the vicinity, or by the capitalization of the income from the property. The value of the buildings, independent of the value of the land, may then be determined, if desired, by subtracting from the total value the independent value of the land.

In determining the value of the structures on the basis of construction costs, the appraiser usually works from some unit base, such as the square foot of floor area or the cubic foot of content. The construction cost per square foot of floor area or cubic foot of content will vary for residential properties within certain limits. With costs varying rapidly, the best data are obtainable by consulting local builders at the time of the appraisal.

Having prepared the measurements of the building, the appraiser, to arrive at a total cost, must determine the grade of construction, select the proper unit cost, and multiply the total cubic content or square foot area by this cost. If the building is over a year or two old, he should deduct depreciation from the results obtained above.

**Appraisal by means of capitalizing rentals.** Where residential property is rented, or where it is of such character that it may be rented, appraisal may also be made on a rental basis. At the present time, it is customary in many communities to appraise strictly residential property—such as one-, two-, and three-family houses, where no collateral service such as heat or janitors is furnished—at 100 times the monthly rental, or at from eight to ten times the annual rental. This method is equivalent to that of capitalizing gross rentals at 12½ to 10 per cent. For new structures, where repairs and upkeep are low, a 10 per cent rate of capitalization is sometimes used. The rate to apply in a given case, however, will depend largely on local conditions.

For apartment properties, where heat and janitor service are furnished, it is necessary to use a higher rate of capitalization. A rate between six and seven times gross rents is customarily used in such cases to capitalize the annual gross rental into a value This apparently larger return merely gives weight to the added expense of furnishing heat, janitor service, and sometimes refrigeration, gas, telephone, and elevator service When rent controls hold revenue at a subnormal level, it is customary to use estimated normal, or uncontrolled, rents for valuation with some allowances for a period of waiting for release from control

The use of the capitalization method for appraising property is not recommended as highly accurate In the first place, old structures may rent at relatively high figures in relation to market value because the buildings may be almost worthless Furthermore, it is necessary to make proper adjustments for vacancies and for loss in collections in arriving at gross revenues The capitalization-of-gross-rentals method of appraisal in respect to real estate is recommended as a check rather than as a definite and independent method, except where other means of ascertaining values are lacking

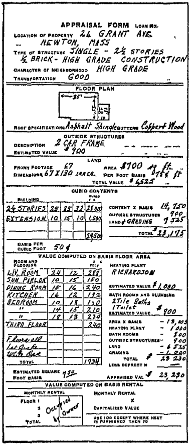
The capitalization method is based upon net income rather than gross rentals It involves an estimate of future income and the selection of a rate of capitalization The estimate is based on reported earnings with adjustments for probable changes Allowances must be made for likely changes in such factors as (a) rents and expenses from price level and cyclical fluctuations, (b) occupancy rates, (c) maintenance requirements, and (d) sometimes rent controls Depreciation is a special matter determined by the expected *economic* life of the building, which may be shorter than the possible physical life because of obsolescence and neighborhood changes Economic life ends when the hope of producing a *net* income ceases

Elaborate formulae are available for the valuation of net income but essentially the problem is the relatively simple one of discounting the future stream of net income before depreciation for an assumed period of years Actual investors may employ instead rough rules-of-thumb in the form of multiples that vary to allow for differences in such matters as income stability, character and age of buildings, the period of the cycle, and local investment conditions Thus, buyers might value a large, 25-year-old, brick apartment building in a given city at ten times the net income *before* depreciation Asked to rationalize the rate, the buyer might state he regarded 4 per cent as depreciation for the remaining 25-year life and 6 per cent as his expected investment return If it were pointed out that he would have recovered an increasing part of his principal from the depreciation allowance after the first year, he would probably point out that he needed to provide for the hazard of a shrinking net income as the building approached retirement Rental income tends to shrink and the operating ratio to rise, as the buildings get older.

**Analysis of appraisal card.** Figure 16 was designed for use in appraising residential and apartment house properties for loan purposes It is aimed not to provide for a complete analysis but rather to suggest a method for recording and weighing the more important factors that should be considered by the appraiser when making valuations for mortgage purposes. (See page 494 )

It will be seen that provision is made here for three bases of appraisal It is always possible, in the case of new properties that are adapted to the land on which they are built, to work out the appraisal on two bases, and, where the property is rented, to use the capitalization method as well Under the floor-area basis, the appraisal card provides for a somewhat more detailed analysis than was previously suggested, in that the structure is valued without taking into account heating plant and bathrooms An allowance, which is added to the total figure, is then made for these items Where this procedure is followed, a slightly lower unit-square-foot basis may be used than is otherwise customary In this way, special consideration can be given to the presence of oil or natural-gas burners, tiled bathrooms, extra bathrooms, and other unusual features that would tend to modify the usual, or average, unit values Some would stress personal credit factors more and add information on such points as the age of the borrower, the size of his family, his income and its ratio to planned monthly mortgage payments, accumulated savings and life insurance, as well as the credit rating shown These are most important whenever the loan goes above a conservative per cent of property value Non-financial details about the property, such as age and exterior design of building, neighborhood or building restrictions, and salability, could be added to the information already listed on type and quality of construction, and the general character of the neighborhood.

**Appraisal of business property.** The valuation of business property is a profession in itself and should be undertaken only by one who is thoroughly familiar with the locality in which the appraisal is being made The basic principles, however, are much the same as those used for residential property Where the site is adequately improved, it is possible to find the combined value of the property by appraising the land according to sales of similar lots in the neighborhood, and to add thereto the cost of the build-



APPRAISAL FORM LOAN NO.

LOCATION OF PROPERTY 26 GRANT AVE.
NEWTON, MASS

TYPE OF STRUCTURE SINGLE - 2½ STORIES
½ BRICK - HIGH GRADE CONSTRUCTION

CHARACTER OF NEIGHBORHOOD HIGH GRADE

TRANSPORTATION GOOD

FLOOR PLAN

ROOF SPECIFICATIONS Asphalt Shingle GUTTERS Copper & Wood

OUTSIDE STRUCTURES

DESCRIPTION 2 CAR FRAME

ESTIMATED VALUE $900

LAND

FRONT FOOTAGE 67 AREA 8700 sq. ft.

DIMENSIONS 67 X 130 IRREG. PER FOOT BASIS 75¢ ft

TOTAL VALUE $6525

CUBIC CONTENTS

| BUILDING | | | | CUBIC F. C. |
|---|---|---|---|---|
| 2½ STORIES | 25 | 35 | 32 | 28000 |
| EXTENSION | 10 | 15 | 10 | 1,500 |
| | | | | |
| | | | | 29500 |

CONTENT X BASIS 14,750

OUTSIDE STRUCTURES 900

LAND & GRADING 7525

TOTAL $23,175

BASIS PER CUBIC FOOT 50¢

VALUE COMPUTED ON BASIS FLOOR AREA

| ROOM AND FLOORING | | | U. F. FEET |
|---|---|---|---|
| LIV. ROOM | 24 | 12 | 288 |
| SUN PARLOR | 10 | 15 | 150 |
| DINING ROOM | 15 | 16 | 240 |
| KITCHEN | 16 | 12 | 192 |
| BEDROOM | 10 | 18 | 180 |
| " | 14 | 15 | 210 |
| " | 18 | 13 | 234 |
| THIRD FLOOR | | | 240 |
| | | | |
| Floors all | | | |
| lst Quarter | | | |
| White Oak | | | |
| TOTAL | | | 1734 |

HEATING PLANT
RICHARDSON

ESTIMATED VALUE $1,000

BATH ROOMS AND PLUMBING
2 Tile Baths
1 Toilet

ESTIMATED VALUE $800

AREA X BASIS - 13,005
HEATING PLANT - 1000
BATH ROOMS - 800
OUTSIDE STRUCTURES - 900
LAND - 6525
GRADING - 1,000
TOTAL $ 23 230
LESS DEPRECT'N —

ESTIMATED SQUARE FOOT BASIS 7.50

APPRAISED VAL $ 23,230

VALUE COMPUTED ON BASIS RENTAL

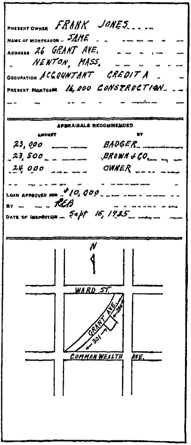
MONTHLY RENTAL

FLOOR 1
2
3
TOTAL

Occupied by Owner

MONTHLY RENTAL
X
CAPITALIZED VALUE

USE 100 EXCEPT WHERE HEAT IS FURNISHED THEN 70



PRESENT OWNER FRANK JONES

NAME OF MORTGAGOR SAME

ADDRESS 26 GRANT AVE.
NEWTON, MASS.

OCCUPATION ACCOUNTANT CREDIT A

PRESENT MORTGAGE 16,000 CONSTRUCTION

APPRAISALS RECOMMENDED

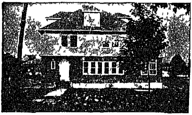
| AMOUNT | BY |
|---|---|
| 23,000 | BADGER |
| 23,500 | BROWN & CO. |
| 24,000 | OWNER |

LOAN APPROVED FOR $10,000

BY REB

DATE OF INSPECTION Sept 16, 1925

N
WARD ST.
GRANT AVE.
200
301
COMMONWEALTH AVE.



PROPERTY APPRAISED

STREET VIEW

Figure 16 Specimen Form of Real Estate Appraisal Card.

ing less depreciation As a check against the results obtained by this method, it is possible to capitalize rentals, both gross and net Store properties in growing localities generally sell for from 8 to 10 times their gross rentals, loft buildings, from 5 to 7 times their gross rentals, and high-grade office buildings, on about the same basis as loft buildings High-grade business property sells from 15 to 25 times net rentals, depending on the rapidity of community growth and the chance for capital gains in land values In every case, one should check these rough rules-of-thumb against current local practice because they vary with time and locality

Where the property is inadequately developed, a different problem is involved It may be possible to capitalize the income of the property in order to ascertain its value, but the capitalized value should more than equal the land value Otherwise, the present structures must be considered as being so poorly adapted to the site as to be worthless In such a case, unless the existing buildings can be materially improved, it would be profitable to tear them down and erect new ones that better utilize the land Where this situation exists, the prospective mortgagee should consider only the land value present

Because of the experience and care required to make an accurate appraisal of business property, the investor who contemplates loans of this character will do well to employ the services of a reputable and conservative firm, familiar with local values, and to rely on the report of such a firm

**Unreliability of tax values.** The tax value of property rarely has any significance in real estate appraisals The procedure followed by assessors in valuing property varies in different cities as well as in the same city at different times It frequently happens that the amount of tax that a municipality pays to the county or the state in which it is located depends on the relation that its total assessed valuation bears to the total for the county or the state Accordingly, the local assessors are inclined to assess property within the local area at from 50 to 75 per cent of its true value, and to raise the local tax rate in proportion The local property owner pays no greater total amount, and the city's contribution to the county or the state is correspondingly reduced in the absence of equalization control

However, assessed valuations actually exceed 100 per cent in some communities because of the pressure to raise revenue and a need to hold the tax rate below a legal limit

**Margin of safety.** Mortgage loans might be made for 100 per cent of the value of the property or even more without loss if the personal credit of the owner-debtor were adequate However, so long as the real estate is to be the primary basis for the loan, some margin must exist between the value of the property and the amount of the mortgage Factors that make such a margin of safety essential are (1) errors in valuation, (2) costs of selling property in the event of foreclosure, (3) items that will probably add to the debt in the event of trouble, such as delinquent interest and taxes, and (4) foreclosure costs (1) Since valuation is a matter of judgment, market value may turn out to be somewhat more or less than such an estimate no matter how carefully the appraisal is made Some institutional appraisers deliberately set their valuation below what they regard as probable market value to cover this range of error and to allow for a "forced sale," that is, a sale on which price is cut below what might reasonably be realized in time by waiting for a suitable and willing purchaser instead of by an immediate sale for whatever can be obtained on short notice (2) In order to sell foreclosed property, the mortgagee will have to pay a sales commission, which will run at approximately 5 per cent in the case of average single family dwellings (3) Whenever a loan becomes delinquent, certain expenses, notably interest, taxes, and maintenance, usually accumulate before the mortgagee is able to realize upon the foreclosed property These expenses accumulate not only up to the time of admitted default, but during the subsequent period in which legal action to foreclose is being taken and sometimes during whatever period the mortgagee is given to redeem his property Since most persons desirous of acquiring property do not care to invest in real estate subject to redemption, the mortgagee generally finds it necessary to take over the property at the time of foreclosure and hold it until the redemption period has elapsed For this reason and the fact that delays are opportunities for price declines, a long period of redemption makes additional risk for lenders (4) Foreclosure expenses vary greatly from state to state and constitute another item to absorb a part of the pledged security[9]

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[9] For the Home Owners' Loan Corporation experience of foreclosure costs and the time required to complete the process, see "Mortgages and Foreclosures," *Federal Home Loan Bank Review*, November, 1937, pp 40–45 At one extreme stood Illinois, where it cost over $300 to foreclose a $5,000 mortgage and took over 1½ years to complete acquisition of the property, so that as a result of loss of interest, accruing taxes, insurance, and depreciation, the total costs amounted to about one fourth of the mortgage The writer concludes "It is obvious that in this state a lending institution which loans for more than 65% of the appraised value of the securing property has inadequate protection " In Massachusetts foreclosing costs were about $30 and the process only two months, so that total costs ran only 3 per cent of the mortgage

For further data see *Seventh Annual Report Federal Home Loan Bank Board* (1939), pp 134–135, 217–219

This abbreviated review of the items that make a margin of safety necessary indicates why the permissible maximum should vary from state to state and under diverse lending conditions It also shows the reasons why high percentage loans are certain to cause investment losses

Some would add to this list the need for protection against decreases in the value of the security Prior to the depression of the early 1930's, many institutions made short-term mortgage loans with no provision for amortization, so that the margin had to protect against price declines. The recent tendency has been to switch to amortized loans, made popular by the savings and loan association These loans, running from 10 to 25 years, usually provide for complete repayment over the life of the loan If the original loan is adequately margined, protection against shrinkage in the value of the pledged real estate may be cared for by debt retirement, which will be discussed after a survey of the factors that cause property to decline in value

**Causes for declines in real estate values.** The more important general causes for the decline of real estate values may be listed as follows

1 *Depreciation and obsolescence* Depreciation is customarily computed on the basis of the expected useful life of the building Thus, in the case of single-family dwellings, frame structures are usually estimated to have a life of from 35 to 50 years and brick and stone from 50 to 100 years Actually, many, if not most, buildings would have an indefinite life through continuing repair and upkeep, if it were not for obsolescence, that is, inadequacy because of style change, or failure to meet changing improved standards of design, or similar reasons Therefore every depreciation rate assumption for buildings assumes reasonable upkeep but contains an indeterminate mixture of obsolescence This latter factor has been particularly important in causing the retirement of commercial structures in American cities Depreciation and obsolescence are often evidenced by rents that have declined to a point where they fail to, or little more than, cover running expenses, so that the building has lost its investment, or economic, value

2 *Neighborhood changes* The neighborhood in which the property is situated may deteriorate This possibility is one that should be carefully noted at the time the mortgage is taken, for values may be rapidly affected by the introduction of stores or factories into a residential section, by changes in the character of the population, by changes in the means of transportation, or by the opening up of new residential areas so that old ones lose their at-

traction Zoning and city planning are two devices to check unfavorable changes and stabilize values

3 *The business cycle* Another type of risk to which the mortgagee is subject arises from the fluctuations of the business cycle Alternate periods of good and poor business will be reflected in the activity of the real estate market and the prices at which property sells During good times sales will be numerous and values will be firm or rising, while the reverse will be true in times of depressed business The volume of building will also tend to vary with the cycle[10] A strong tendency exists to overbuild during periods of easy money and advancing prices, which makes it necessary for the investor in mortgages to follow carefully the trend of economic conditions Appraisals should be made on a more conservative basis and loans restricted during the later stages of a building boom It is particularly true at such times that the older buildings represent the poorest types of property on which to lend, because of the rapid depreciation in value caused by the competition of modern structures For this reason the most conservative real estate mortgages are those secured (1) by new residential property with modern conveniences, situated in a well-adapted neighborhood, (2) by up-to-date apartment houses, well constructed and well situated, or (3) by modern business structures on sites that are well adapted to their intended use

4 *Price level movements* Closely related to the business cycle, but nevertheless a factor requiring separate consideration because of its occasionally independent movement, is the general price level Its importance lies in its relation to the prices of materials and wages that make up building costs In addition to the fact that declining prices tend to depress general business activity and consequently the ability of tenants to pay rent, they make it possible for buildings to be replaced more cheaply and so reduce the security behind mortgages generally

Construction costs ordinarily move in the same direction as general prices, but somewhat more slowly because of the substantial wage factor Some idea of the relative importance of changing construction costs may be obtained from the following table of index numbers[11]

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[10] For a discussion of the long 18-year building cycle, see Long, Clarence D, *Building Cycles and the Theory of Investment* (Princeton Princeton University Press, 1940)

[11] *Engineering News Record,* Building Cost Index The differences between various indexes are discussed in Hertzman, I L, "Construction Cost Indexes," *Appraisal Journal,* January, 1950, pp 109-114

COST OF BUILDING INDEX NUMBERS

(1926 = 100)

| | | | | | |
|---|---|---|---|---|---|
| 1926 | 100 | 1934 | 90 | 1942 | 120 |
| 1927 | 100 | 1935 | 90 | 1943 | 124 |
| 1928 | 102 | 1936 | 93 | 1944 | 127 |
| 1929 | 103 | 1937 | 106 | 1945 | 129 |
| 1930 | 100 | 1938 | 106 | 1946 | 142 |
| 1931 | 91 | 1939 | 106 | 1947 | 169 |
| 1932 | 76 | 1940 | 110 | 1948 | 186 |
| 1933 | 80 | 1941 | 114 | | |

**Methods of safeguarding mortgage loans.** The first step in safeguarding a mortgage loan lies in a program of debt repayment that will maintain at least the original safety margin by reducing the mortgage at as rapid a rate as the value is likely to decline. A number of the potential value-reducing factors just outlined are uncertain. Depreciation alone partakes of the inevitable. Loan amortization should at least equal this latter factor. Unless the original margin was more than was necessary, some additional amortization is desirable to cover the less predictable possibilities. A rate of 4 or 5 per cent per year would probably be regarded by conservative lenders as minimum for any save loans that had excess margin initially. The need for amortization, then, will vary with original margin of protection, the age and type of building, the outlook for neighborhood changes, business conditions, and construction costs.

In order that the rate of loan reduction under various common loan plans can be studied, the accompanying table and Figure 17 show several arrangements: (A) a loan for eleven years and seven months at 6 per cent interest, and 4½ per cent loans running for (B) 15, (C) 20, and (D) 25 years. In all these plans the monthly payments consisting of interest plus principal are equal over the whole period. The first (A) and shortest period was substantially that used by many savings and loan associations prior to the advent of the F.H.A. loan (1934), which will be discussed shortly. The borrower paid one per cent each month, and with interest at 6 per cent per year his debt was reduced 6 per cent during the first year. As the principal was reduced the interest decreased and the portion of the monthly payment devoted to principal reduction grew. The similarly arranged plans for 20 (C) and 25 (D) year loans at 4½ per cent interest represent the conditions of maximum maturity for F.H.A. loans on single-family dwellings. Although the borrower averages 4 per cent per annum on principal with the 25-year loan, the equal payment arrangement results in the amortization averaging only 2.4 per cent in the first five years.

PERCENTAGE OF ORIGINAL LOAN UNPAID UNDER SEVERAL EQUAL MONTHLY PAYMENT PLANS

| *At end of year* | *6%* *11 yrs 7 mo* | *4½%* *15 years* | *4½%* *20 years* | *4½%* *25 years* |
|---|---|---|---|---|
| 1 | 93 83 | 95 22 | 96 84 | 97 78 |
| 2 | 87 28 | 90 23 | 93 53 | 95 46 |
| 3 | 80 33 | 85 00 | 90 07 | 93 04 |
| 4 | 72 95 | 79 53 | 86 46 | 90 50 |
| 5 | 65 12 | 73 81 | 82 68 | 87 84 |
| 10 | 18 07 | 41 04 | 60 99 | 72 64 |
| 15 | 0 00 | 0 00 | 33 84 | 53 59 |
| 20 | — | — | 0 00 | 29 75 |
| 25 | — | — | — | 0 00 |

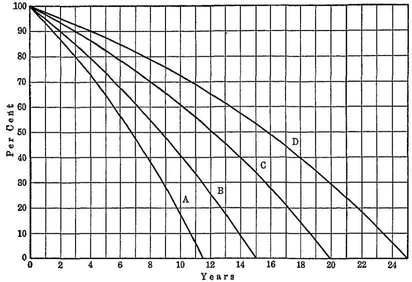

**Figure 17. Declining Balances of Amortized Loans—Percentage Unpaid at End of Each Year, Combined Monthly Payments of Principal and Interest Being Constant**
(A = 11 yr 7 mo —6%, B = 15 yr —4½%, C = 20 yr —4½%, D = 25 yr —4½%
Horizontal rulings at 10% intervals, Annual vertical rulings )

It is also important that an annual check be made to see that all taxes and local assessments are properly paid Such obligations constitute a prior lien on the property, preceding even the first mortgagee's claim In most states real estate can be sold for unpaid taxes after legal notice of the proposed sale has been given, but the owner or mortgagee is given a period in which to redeem by payment of the tax plus additional expenses In order to prevent such a sale, the mortgagee should make an annual check to be sure that taxes have been properly paid[12] He may make such a check by requiring the mortgagor to show his tax receipt at the time of his interest payment following the assessment of taxes or by checking with tax collector's records The practice adopted for F H A and V A loans of requiring borrowers to deposit a fraction of the taxes and insurance money each month with the lender is growing

It has already been suggested that the mortgagee should keep in his possession adequate fire insurance on the property to cover his mortgage, and that a suitable mortgage clause should be indorsed on all policies

**Second mortgages.** Second mortgages on improved urban real estate were formerly common in certain sections of the country. Their use and popularity have fluctuated with conditions of the real estate market Their investment attraction lay in their high yield, but their subordinate position made them subject to the considerable risk of total loss in the event of trouble They were customarily taken by a vendor of a property, often a speculative builder, when the buyer made so small a down payment that the conventional first mortgage would not finance the balance In such cases a second mortgage would be given to make up the difference.[13] Since usury laws generally limited the rate of interest, the seller would make the price of the real estate sufficiently high so that he could afford to sell the second mortgage at a discount that would raise the yield to a level commensurate with risk Or, if the borrower dealt directly with a mortgage house, substantial commissions might achieve the same end Total costs often ran to 15 and 20 per cent per annum This total included the gross profit of the mortgage broker and a yield to the investor of from 8 to 10 per cent However, such loans were only for a fraction of the total borrowing and were ordinarily amortized over a three- to five-year period

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[12] In some localities it is customary for the tax collector to notify the mortgagee in writing of his intention to sell the property, thus giving the mortgagee an opportunity to pay the tax and start foreclosure In other cases legal notice of the proposed sale consists of newspaper advertising and the posting of a notice of sale at some public place

[13] Another device was the "split mortgage" A single large first mortgage, say for 75 per cent of the purchase price, was given by the purchaser of a home An amount equal to 60 per cent was then sold to a conventional investor and the 15 per cent balance retained by the original mortgagee, usually a mortgage or finance company, which subordinated its portion of the loan to that sold With an interest rate of 6 per cent on the total mortgage, the rate paid to the holder of the preferred 60 per cent might be 5½ per cent, leaving a balance considerably in excess of the nominal 6 per cent for the holder of the subordinated portion, which latter would presumably be amortized over a short period

With the introduction of Federal Housing Administration insured loans, which permit mortgage loans to run as high as 80 and 90 per cent of the value of the property and prohibit the simultaneous use of a second mortgage, the latter tended to disappear Postwar legislation permits the Veteran's Administration to guarantee second mortgages up to $4,000 so that veterans can acquire homes with small or no down payments In spite of these institutions, the second mortgage made its reappearance in the home finance field with the postwar building boom [14]

**Federal Housing Administration insured loans.** Under Title II of the National Housing Act (1934), a plan of mortgage insurance was created for one- to four-family houses The insurance is available only for mortgages made by approved lending institutions These are for the most part life insurance companies, savings and loan associations, banks, both savings and commercial, and mortgage companies Mortgages are eligible if they meet the construction standards of the Federal Housing Administration and do not exceed specified percentages of the appraised value Under the original act the loan was permitted to go up to 80 and 90 per cent of value but not for more than $16,000 [15] As amended by the Housing Act of 1950, these percentages were increased so as to run from 80 to 95 per cent with the same $16,000 maximum for a mortgage on a new, single-family, owner-occupied home Similarly, the previous maximum period for long amortization was increased from 20 and 25 years to 28 and 30 years The highest loan percentages and longest repayment periods are granted to (1) the lowest cost homes, (2) those with the largest number of bedrooms, and (3) those located in areas in which construction costs are high The statistics of operation published by the Federal Housing Administration show that the bulk of the mortgages insured have been made either at, or very close to, the most lenient terms permitted

All loans made are repaid during the life of the mortgage on a monthly repayment plan under which the sum of the interest and principal makes a constant total each month The borrower is also required to deposit an amount each month to cover property insurance and taxes Originally, the maximum interest rate was set at 5½ per cent but this rate has been reduced to 4½ per cent (since 1939), although some lenders make a rate slightly lower In addition to the interest, the borrower is currently obligated to pay a mortgage insurance premium equal to one-half per cent per annum of the unpaid principal

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[14] *Wall Street Journal*, January 20, 1948

[15] To aid in the financing of housing for workers in defense industries during World War II, Title VI permitted 90 per cent, 20 year insured loans for either rental or owner occupied property

These mortgage insurance premiums are paid into the Federal Mutual Mortgage Insurance Fund Until 1940, the operating expenses of this fund exceeded income, which consisted chiefly of insurance premiums and appraisal fees, so that the fund was made up of allocations of capital from the Reconstruction Finance Corporation If an insured mortgage is defaulted, the mortgagee forecloses and turns the property over to the administrator of the fund, who issues debentures that run for a period longer than the mortgage [16] The Federal Government has agreed to guaranty these debentures, and so, in effect, stands behind the insured mortgages

However, the fund is permitted to issue debentures only up to $75 or 2 per cent of the unpaid mortgage balance, whichever is less, for foreclosure costs incurred by the mortgagee In view of the high foreclosure costs in certain states, such as Illinois and New York, losses equal to a substantial percentage of the loan are possible It is true that a certificate of claim is issued to the mortgagee for expenses incurred in connection with foreclosure that are not covered by debentures Such certificates are paid out of any "profit" realized upon the sale of property In view of the slender original margin of protection and the slow amortization of principal, the certificates are unlikely to have value in depression periods when foreclosures will be most frequent

Under another section of the act, insurance, to be handled by a separate fund, was instituted for large-scale rental housing projects A loan, in order to be eligible, must not exceed $5,000,000, nor $1,800 per room, as of 1950 These loans are not to exceed 90 per cent of the valuation of the mortgaged property and must provide for amortization over a period set by the administrator The most frequent term in 1950 was 32 years and 7 months, and after August 1, 1939, the interest rate was set at 4 per cent

Originally, this F H A plan of mortgage insurance was initiated to stimulate construction during the depression However, the expiration dates and the maximum amounts of mortgages to be issued under the various sections of the act were amended from time to time to extend its operations In the postwar years the housing shortage was made the reason for its continuance although conditions were exactly opposite to those that had led to its creation With high public purchasing power and a huge pent-up demand for housing, building operations at capacity were virtually guaranteed without the further assistance of F H A mortgage insurance Easier credit added to the expansion forces of a boom period could mean only that materials and building labor rates would be inflated to still higher price levels, since, when credit adds purchasing power to a situation operating at capacity, higher prices rather than additional product are the consequence One way in which the F H A influence added to the inflationary influence in this period was to keep interest rates low and amortization periods long The resulting lower monthly charges per dollar of debt made the home buyer able to assume a higher total debt than he otherwise could Ordinarily, rising interest rates and shorter repayment periods would act as a restraint When skillful, institutional, private lenders assume the risk on mortgage loans, they tend to demand somewhat more rapid amortization when high construction costs suggest risk of a price decline [17]

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[16] Debentures cover principal on the date foreclosure proceedings are instituted, plus payments for taxes and hazard insurance They are dated and bear interest from the date foreclosure begins Currently, they pay 2¾ per cent interest

When founded, the F H A mortgage insurance had various economic and practical factors in its favor that were inherent in the timing Created in depression, it served as an economic measure to combat deflation, unemployment, and lack of confidence On the practical side, its guarantees, because they were made after a major deflation had brought real estate prices low, were unlikely to suffer any major losses from low safety margins and low amortization rates Such guarantees, continued into a building boom, become radically different on both aspects On the economic side, easy credit not only tends to further price inflation in the manner outlined in the preceding paragraph but tends to prolong construction activity at high prices and so makes it likely that the subsequent reaction will be more severe On the practical side, experience suggests the danger of mortgage guarantees in a boom period

The losses of those who made much more conservative loans during the active decade of the 1920's when the depression of the 1930's set in are suggestive of the risks being assumed by the Federal Government [18] Those who argue that the regular amortization of loans under F H A and Veterans' Administration eliminate most of this risk overlook the universal use of the same desirable arrangement by the savings and loan associations Nevertheless, these associations shared in the general troubles of the mortgage market in the 1930's Moreover, as pointed out before, their repayment rate was much more rapid than under the current Government-sponsored plans Under these new-type plans, the rate of repayment often falls short of equalling normal depreciation rates to say nothing of creating protection against the hazards of price-level decline or neglect of maintenance

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[17] For a description of such restraints, see Pease, Robert H , "Today's Real Estate Market," *Harvard Business Review*, XXVI 391 (July, 1948)

[18] Lintner, John, *Mutual Savings Banks in the Savings and Mortgage Markets* (Boston Harvard University Press, 1948)

The importance of such easy credits was recognized in the course of events after the outbreak of war in Korea on June 25, 1950 Under the authority of the Defense Production Act, the Board of Governors of the Federal Reserve System issued a regulation setting maximums on the amount and maturities for all loans that were not guaranteed or insured by any government agency Concurrently, the Federal Housing Administration and the Veterans' Administration issued new regulations relative to loans that they insured reducing the maximum loan as a percentage of the purchase price Such credit restrictions may be changed from time to time. They served the purpose of restricting credit so as to lessen the inflationary threat, and reduced the competition of the private housing industry for men and materials as against the demands of war production

## Other Real Estate Investments

**Bonds secured by real estate mortgages.** As the size of the mortgage increases, the more limited does its market become Very large mortgages can be sold only to the large life insurance companies, certain banks, and a few wealthy individuals The alternative is to offer a bond issue secured by the mortgage in question The building boom of the 1920's, marked by an unusual volume of office buildings, apartment houses, and hotels, created a flood of such real estate bond issues These issues were sold chiefly by investment banking houses that specialized in this field

Most of these issues were construction loans, that is, they were sold during the construction period and the proceeds were used directly to pay builders and contractors Such financing involves special hazards that require special care the need for making payments carefully lest funds be exhausted before completion of the building, letting the work only to financially responsible contractors to be sure that costs are kept within bids and that mechanics' liens are avoided, and inspection that will keep workmanship and materials up to standard The other group of risks lie in the uncertainty of subsequent operating results living up to preliminary promotional estimates Rents and occupancy may fall below expectations or expenses may be greater. Changes in the local real estate situation can always alter the financial position of a building after it is operating, but an estimate of the future is especially difficult, and estimating income for construction loans calls for extra skill and judgment.

During the 1920's large apartment, hotel, office, and commercial buildings in the larger cities were financed principally or wholly from the proceeds of such real estate first-mortgage bond issues. While sometimes equalling the total construction costs, they were offered to the public as substantially two thirds of appraised values. The appraisal was based upon anticipated rentals rather than construction cost. Property can be worth more than bare construction costs and land values. Investment value depends primarily upon income rather than cost of production. But conditions that will permit an income more than sufficient to support a value substantially higher than cost of building are expected to be short-lived. When such rentals exist, building will be stimulated to the point of increasing the supply of housing and bringing the high rentals down. In fact, the danger lies in a scramble of building that will elevate building costs and conceal the fact that under more normal conditions these costs could readily fall to a lower figure.

Because this segment of the industry was more interested during the 1920's in profits from construction and the sale of securities than in the long-run investment quality of the bond issues being sold, the real estate market was supplied with a volume of rental space almost certain to lower occupancy and rentals and create distress. When the Great Depression of the early 1930's brought about a price-level decline of one third as a result of monetary and banking conditions (bank failures and credit contraction reduced deposits by about one third), tangible property values of all kinds inevitably fell. Even reasonably conservative loans that had met their debt service adequately and with a margin of safety were caught in the debacle as well as the hundred per cent bond issues.

After this experience the construction loan bond issue fell into disfavor. Buildings for commercial and office purposes have had to rely for the most part upon conservative direct mortgage lending by life insurance companies for such borrowed funds as were to be had. The only important revival of private real estate financing during the 1940's was in the multi-family dwelling, or apartment house, where F.H.A. mortgage insurance was available up to 90 per cent of appraised value. Experienced observers have looked with concern upon such insurance for rental housing in spite of the economic need it was designed to meet[19] They point to the small margin of safety under a 90 per cent loan, barely enough to cover errors in judgment in valuation and a sales commission if foreclosure and resale of the property become necessary. Nothing is provided for risk factors that might make a higher margin necessary As for loan amortization, such loans with a repayment period of 32 years and 7 months provide for less than a 2 per cent per year reduction of principal in the early years, approximately 1½ per cent the first year With construction costs high during the building boom, ordinary caution would argue for a larger safety margin and more rapid repayment in the early years when the building was new and could command the highest rents As they stand, such loans call for as large monthly mortgage payments in the third decade of their life, when rental value is likely to be lower and maintenance costs higher, as in the first years when the property is new and maintenance nominal

In view of the importance of the F H A guaranteed mortgage, reference to the experience of private guarantors is of interest Such guarantees were made for first-mortgage bond issues secured by apartments and for mortgage certificates representing an interest in a pool of mortgages deposited with a trustee The guarantees were designed to facilitate the sale of the issues to individual investors and small institutions Three classes of guarantors existed (1) the issuing investment banker or mortgage company, (2) an affiliated guarantor company set up for that purpose, and (3) the independent surety company engaged in a general insurance business

**Guarantee by investment banker or affiliate.** The guarantee by the investment banker specializing in this field or an affiliated company need not concern us here Such guarantees lacked the necessary independence of judgment to make the guarantee valuable Even where the house selling the issue was willing to risk its capital as evidence of its good faith and belief in the issues it was selling, the amount of its capital was likely to be very small in relation to the risks assumed Typically, in the pre-SEC 1920's, information was lacking both as to the capital and financial condition of such guarantors and the total amounts of liability they were assuming

**Guarantee by surety companies** An important form of security was the guarantee of real estate issues by an independent surety company, which was typically engaged in other forms of insurance as well The National Surety Company and the Maryland Casualty Company, among others, were prominent as guarantors of this type Under one plan, as used by the former company, the surety company placed its unqualified guarantee on every insured bond or mortgage certificate issued to the public Under a second plan, as employed by the latter company, a policy was issued that guaranteed the full payment of principal and interest when due on each mortgage deposited with the trustee

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[19] National City Bank of New York *Monthly Bulletin on Economic Conditions,* December, 1949, p 136

A question is raised as to which of these two methods of guarantee offers the best protection to the security holder In practice, there is probably little choice one way or the other The second form, which was used by the Mortgage Company of Maryland, had the advantage of requiring the Maryland Casualty Company to assume many small risks, as compared with one large risk, since a separate policy went with each underlying mortgage Furthermore, this method undoubtedly kept the insurance company in close touch with the type of mortgage assumed by the Mortgage Company Any substantial number of defaults came immediately to the attention of the mortgage company Although the former plan, adopted by the Mortgage Security Corporation, appeared to offer greater security, in that the certificate holder looked directly to the surety company in case of default, nevertheless it required the surety company to assume a large individual risk, and did not require, *per se,* any attention on its part until a default in the entire issue had occurred

The very severe blow dealt by the real estate decline after 1929 demonstrated the relative merits of the various methods of guarantee While no casualty company escaped the ravages of hard times, the financial strength of the independent surety company enabled it to make a better record on its guarantee, although sacrifices on the part of bondholders and a readjustment were necessary[20] The one important weakness of this form of guarantee supplied by a sound company with a number of lines of insurance appears to lie in the hazard of a widespread decline in real estate brought about by adverse economic conditions The resulting liabilities that are created may be so large in comparison with the net worth of the company, that failure may result The situation is analogous to the conflagration hazard of the fire insurance company, except that the modern company in that field has so diversified its risks geographically that no one disaster can threaten all its risks to the extent that is possible in the mortgage insurance field

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[20] For an account of the refunding plan of the Maryland Casualty Company (Md ), see *Moody's Manual of Investments Banks, Insurance Companies, Investment Trusts, and Real Estate, Finance, and Credit Companies* (New York Moody's Investors Service, 1934), pp 1907–1908, for the reorganization plan of the National Surety Co , see *ibid*, 1935, pp 1400–1402

The disadvantages that the mortgage company, as compared with the insurance company, suffers as a guarantor are (1) the lack of an independent point of view with respect to its lending policies, (2) a relatively small stockholders' investment in relation to the liability assumed, and (3) the usually complete investment of its resources in its operations—that is, mortgages—so that substantial liquid resources to meet an emergency are ordinarily absent

The significance of the surety company guarantee experience for those interested in its possible application to the Government's F H A mortgage insurance lies in two chief points In the first place, the record of losses should be read in the light of the fact that the insurance was undertaken for a premium of one half of one per cent by independent insurance companies that believed that this premium was wholly adequate for the risk assumed They stood to lose far more than the premiums if, as happened, losses were severe The second point is that the important losses came with depression rather than regularly year by year This suggests that the experience of F H A and V A mortgage insurance during years of business recovery in the 1930's and of prosperity in the 1940's cannot be regarded as a measure of long-term losses over a period of depression and unemployment

**Mortgage-supported bond issues.** Another device designed to meet the investment risk in mortgages was the pooling of mortgages and the sale of bonds supported by those issues They were variously called "mortgage collateral bonds," "collateral trust certificates," and "mortgage participation certificates" Some were among the guaranteed issues described above All these issues were, in effect, investment companies in the mortgage field and offered convenient denomination, management, and some marketability The collateral security was diversified as compared with the individual mortgage investment The mortgage company that sold such an issue was able to offer a uniform instrument that could be expanded indefinitely in amount [21]

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[21] An example of such a company is the Mortgage Security Corporation of America (see *Moody's Manual of Investments*), incorporated in 1915 This company purchased first mortgages on completed homes or income producing properties and issued its own bonds, which were additionally secured by a stockholders' investment Some of its bonds were guaranteed by the National Surety Co Defaults occurred in 1932–33 The guarantor company had to be reorganized

While the record of such mortgage companies was satisfactory enough in ordinary times, many failed in times of special stress One reason for this failure to survive strain probably lay in the relatively small stockholders' investment that protects the bondholders It is interesting to note that certain other institutions that invest heavily in mortgages—namely, the mutual savings banks, the life insurance companies, and the building and loan associations—have the advantage of being able to reduce the rate of return to their members when their own income from mortgages is curtailed and losses have to be written off

**Leasehold mortgage bonds** The practice of erecting large metropolitan buildings upon leased ground has at various times been popular The practice is permitted under stipulated conditions for F H A insured loans Under this arrangement the builder makes no investment in land and he may finance a substantial part of the building cost by an issue that will be known as leasehold mortgage bonds In the event of foreclosure the bondholder would take over the building, but the obligation to pay the stipulated ground rent would continue Failure to pay such rent would break the lease, and the owner of the ground would then be entitled to the building and any other improvements made on his land The result is that the land owner has a first claim upon earnings for the ground rent, whereas the first mortgage on the leasehold (building and lease) occupies a position like that of a second mortgage

The lessee is obligated as a rule to pay not only ground rent but also the real estate taxes The tendency in many communities for such taxes to increase has created a burden that has weakened the position of some leaseholds Increases in the value of the land accrue to the benefit of the lessor eventually, with the expiration of the lease If, however, the lease runs for a long period, and the ground rent does not change, increases in ground value should be reflected in higher rentals from the tenants of the building, which will increase the security of the leasehold mortgage Sometimes the lease provides for an increasing ground rental, which may weaken the position of both the owner of the leasehold and the leasehold mortgage bonds

When money is borrowed on a building constructed on leased ground, a leasehold mortgage is created To protect such a mortgage, the lease should run long enough to permit the lessee to recover sums necessary to pay off the mortgage, both principal and interest Many such leases run for 99 years with a fixed rental One building may well succeed another during such a long period.

Sometimes a shorter term, say 21 years, may be set as the duration for which the rent shall be unchanged with provision for a lease renewal at a new rent to be set by arbitration Conservative institutional lenders are inclined to require full repayment of any loan before the lease expires and the rent becomes subject to renegotiation

Because of the subordinate position of the lessee, anyone who lends on his leasehold interest will scrutinize the margin of property value over the loan and of net income over operating expenses and ground rent to insure the safety of the payments on the leasehold mortgage Where the terms of the lease are equitable, where there is a large equity in the property following the leasehold mortgage, or where the property is likely to increase, rather than decrease, in value, the leasehold mortgage may be adequately secured and thus provide an excellent medium for investment Occasionally, where the lease runs for a very long period and the ground rent was fixed at a time in the past when values were low, the prior charge may be so small that the leasehold mortgage may enjoy an extremely strong position, much as a second mortgage would if it were preceded by only a very small first mortgage

**Land trust certificates.** A type of real estate investment, with unique features, is the land trust certificate[22] While any land can be placed in trust, and beneficial ownership divided into shares by the issuance of certificates, the land trust certificate is typically employed when land is leased for a long period to another for use and improvement The legal title to the land, subject to the lease, is conveyed to a trustee under an indenture or deed of trust which states that the trustee shall hold such title for the benefit of the certificate owners

Under the trust agreement the equitable ownership of the land is divided into a number of equal parts, and a trust certificate is issued showing the number of parts owned by the individual holder The actual ownership of the land is, of course, subject to the right of the leaseholder, who continues in possession as long as he pays the stipulated rent In some cases there will be a clause in the lease providing that the lessee may purchase the land outright at a stipulated price Unless the certificate is redeemed the investment is perpetual and has a fixed income for the period of the lease Thus, although an ownership instrument in legal form, it is a credit instrument by indirection for the duration of the lease The claim for rental payments is a liability of the lessee, who is under compulsion of paying unless he is willing to lose through default any buildings he may have constructed on the leased land The security of the ground rent, which is the income of the land-trust certificate holders, depends on the value and probable economic life of the total property Since the improvements are ordinarily worth a number of times the value of the land, the lessee and his creditor, the leasehold mortgage holder, bear much more risk than the owners of the land

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[22] See Allen, Irving, "The Land Trust Certificate—A New Development," *Annalist*, August 6, 1926, p 171

The use of the land-trust certificate is largely confined to a relatively small number of ground sites in metropolitan centers where land is very valuable An owner of such land or his heirs may find these certificates a convenient device for selling the land after a lease has been made Or, the tenant-lessee who erected the building may have an opportunity to buy the ground and choose to raise the money by selling certificates By inserting a provision permitting redemption of the certificates at a stipulated price, he retains what amounts to a repurchase option should he later choose to combine land and building under one ownership Or, he could refinance the certificates if yields for such obligations declined For example, let us suppose that land with a ground rent of $50,000 per year was sold through land trust certificates for $1,000,000, thereby yielding 5 per cent Later the market yield for such obligations fell to 4 per cent. If the issuer had the privilege of redemption at the issuance price he could redeem for $1,000,000 and sell a new issue for $1,250,000, at which figure the $50,000 of ground rent would be a 4 per cent return [23]

**"Sale and lease-back" of property.** Since 1945 one of the developments in corporation finance has been an arrangement known as the "sale and leaseback" of real estate A business corporation desirous of raising funds sells its real estate and simultaneously enters into a long-term lease with the buyer whereby it rents the property, say for 20 to 30 years Sometimes there are repurchase options or options permitting an extension of the lease for an additional period The most frequent investors under this arrangement are life insurance companies, although sales are also made to charitable and religious endowment funds, and occasionally to individuals The tenants commonly agree to pay all taxes, insurance and maintenance costs so that the rentals are wholly income and return of principal

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[23] The land trust certificates of the Bankers Building Corporation (Chicago) will serve to illustrate some of the features already discussed in a general way This building, which is located at the southwest corner of South Clark and West Adams Streets, was financed in part by the issue of 5,000 land trust certificates representing 5,000 undivided parts of the equitable ownership of the premises The land, consisting of 22,250 square feet, had an appraised value of $6,650,262, the 41-story office building was appraised at $6,972,000 Thus, the total appraised value of land and building was $13,622,262 The annual rental under the lease was $275,000, which allowed $55 per annum for each certificate holder (The lease further provided for erection of the Bankers Building, to be started within six months of sale of certificates and furnished according to specifications)

A $5,000,000 issue of first-mortgage leasehold bonds, which followed these certificates, was sold The leasehold mortgage bonds in this case clearly occupied the position of a second mortgage, at least so far as the practical aspects of the situation were concerned, as shown by the subsequent record of the issue.

An example is found in a typical deal in which a large department store chain sold its store buildings in certain cities to a college for $16,150,000 and agreed to lease back the property for 30 years for a diminishing scale of rentals totalling some $26,000,000 A rough calculation showed these payments would give the investor a 3½ per cent return and complete repayment of the purchase price

Such an arrangement results in an assumption of liability for rental payments by the vendor corporation that does not appear as such in the balance sheet proper To permit the investor to analyze the securities of such a corporation, full disclosure of the lease is essential so that he can treat the rentals as so much fixed charges The obligation is much like the claim of a serial bond issue except that the total payments are in the form of rent The safety of such an investment rests jointly upon (1) the real estate that the owner-lessor would fall back on in the event of a rental default, and (2) the general credit of the vendor-lessee corporation Because of the creditor-like position of the purchaser and the investment equal to the full value of the real estate (sometimes less), the credit of the lessee is very important Analysis of the credit standing of the lessee corporation would follow along the lines laid down earlier for the study of the creditor securities of the business corporation [24]

**Treatment of defaulted real estate loans** The treatment of real estate loans differs markedly between the simple individual mortgage and the real estate bond issues, even when the latter is in its simplest first-mortgage form If there is a default upon a mortgage the matter may be negotiated directly between borrower and lender to avoid foreclosure Most mortgages are on individual homes, and when the borrower is making his best efforts to pay, the institutional lender, anxious to avoid the cares and expenses of foreclosing on the real estate, will usually be interested in an arrangement that continues the payment of interest, provided the ultimate security of principal is not endangered If the borrower has created an adequate margin of safety he may be able to postpone some principal payments in whole or in part [25]

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[24] The important tax considerations that enter these transactions are somewhat beyond the scope of this discussion as they concern the corporation primarily rather than the investor These matters are discussed by Cary, William L , "Corporate Financing Through the Sale and Lease back of Property Business, Tax, and Policy Considerations," *Harvard Law Review* 62 1–41 (November, 1948) Similar material by the same author may be found in "Sale and Lease-back of Corporate Property," *Harvard Business Review* 27 151 (March, 1949)

In the case of bond issues, the situation differs, and a formal reorganization that will meet the demands of the numerous bondholders and the courts is required just as in the case of any bankrupt corporation Sometimes the first-mortgage bondholders take over the property and receive stock for their bonds representing the whole ownership of the property More often at least part of their claim is exchanged for new first-mortgage income bonds, with interest contingent upon earnings To compensate for any reduction in principal, they might receive part or all of the common stock of the reorganized corporation

Where the original bonds usually were serial maturities, the new income bonds usually provided sinking funds contingent upon earnings Usually the payments were made to come after the stipulated interest [26] To insure the payment of sinking fund even though earnings for the reorganized company recovered but moderately, a few indentures placed such payments on a parity with the interest claim [27]

Two points are peculiar to these reorganized real estate bond issues first, the amount available for interest and sinking fund is the net income *before* depreciation, and second, there is often provision for special items that may be deducted in computing *available* net income, such as working capital, previous reorganization expenses, and minor capital expenditures. Since the replacement of the building is a distant event, cash is not retained in the corporation treasury to counterbalance depreciation. It is characteristically disbursed as income payments to the securityholders or used for the retirement of senior issues.

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[25] Negotiation and adjustment rather than foreclosure may be used in the large as well as the small mortgage In 1929 the Metropolitan Life Insurance Company, the world's largest insurance company, loaned $27,500,000 to finance the construction of the Empire State Building, the world's tallest office building Trouble overtook the property but the insurance company decided it would be best to leave the management of the building to others Unpaid interest of $4,262,000 was cancelled upon condition that the owners pay $500,000 on principal Interest was cut to 2 per cent for one year, then 2½ per cent until 1943, and then a rate of 4 per cent thereafter

[26] The indenture of the Hotel Lexington, Inc (New York), bonds provided that all the net income after income bond interest at 4 per cent should be used for sinking fund until the original $4,000,000 of bonds had been reduced to $2,400,000, after which sinking fund was to be optional with the directors

[27] The Five Twenty Michigan, (Inc), (Chicago) refunding mortgage leasehold income 5's provided in their indenture that only three fourths of available net income was to be used for interest, and that one fourth was to be used for sinking fund until the latter payments reached a stipulated maximum amount, which was gradually increased over the period 1936 to 1952

**Current developments, and summary.** In summarizing the instructive experience found in the record of real estate loans during the 1930's, a sharp distinction must be made between real estate bonds and individual mortgages. Although the bonds and mortgages are superficially similar, their records were markedly different. Bonds suffered much more heavily.[28] The weaknesses that have been made apparent were as follows:

1. *Bad appraisals and excessive loans.* This evil was partly due to the lack of sound independent appraisals. Those making the supposedly independent valuations were not infrequently closely bound by interest, if not by actual affiliation, to the parties promoting the construction or to the specialized investment banking houses that sponsored the bond issues. Another difficulty lay in the willingness of the appraisers to ignore actual costs and base valuation on generously estimated future rentals. Even granted that such rentals might have been in line with conditions of the moment, experienced appraisers would have recognized that, whenever rentals rise so high as to produce values much in excess of the cost of production, a volume of building is likely to follow that will drive rentals, and consequently values, down to a normal relation with cost of construction.

2. *Construction loans.* The bulk of the real estate bond issues were based on business, hotel, and apartment properties that were to be constructed from the proceeds of the loan. The necessary absence of any record of income and expense made easier the misjudging of values.

3. *Excessive and unsound building* was a natural outcome of the easy money that was available as a result of general prosperity and of the vigorous promotion by those selling the bond issues. Houses selling real estate bonds found it easier to sell than to acquire sound issues. Operators were more easily available to undertake construction when the amount that could be raised by

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[28] Ernest A. Johnson in a study of 1,090 long term real estate issues totalling over $4 billion for the period 1919–1934 found 13.6% called, and 12.5% matured. Of the balance outstanding at the end of the period 83% were in default. On the basis of bid prices for April, 1935, undefaulted issues showed an average "recoverable value" of 72.4% and defaulted issues of 24.6% of par value. "The Record of Long Term Real Estate Securities," *Journal of Land & Public Utility Economics*, Feb. 1936, pp. 44–48.

a first mortgage bond issue rose closer to 100 per cent. It should be noted that the creation of surplus rental space by excessive building inevitably tended to increase vacancies to an abnormally high figure for even soundly conceived and well-managed structures already in existence

4 *Business depression* As the depression became more acute in the years following 1930, difficulties increased However, it is not improbable that as much as a fourth of the outstanding real estate bond issues were in default as early as the fall of 1930

5 *Difficulties of reorganization with a bond issue* With bondholders scattered, united action to obtain prompt and economical reorganization was frequently impossible Prolonged and costly receiverships resulted Holders of individual mortgages still have the advantage of being able to take more prompt action in the event of default and to adapt their course to the requirements of the particular situation

Individual mortgages, while suffering greatly during this period, had a much superior record The chief reasons may be summarized as follows

1 *Type of buyer* Where real estate bond issues were chiefly absorbed by individual investors and to some extent by small banks, mortgages were acquired for the most part by the institutional type of investor, such as the life insurance company, the savings bank, and the savings and loan association Because of the greater experience and skill of the institutions, more security was required from borrowers Even individual investors in mortgages were likely to confine purchases to local property about which they had more knowledge than the average bond buyer had of the security that he was purchasing

2 *Type of property* Bond issues were generally secured by commercial property—that is, business buildings, hotels, and rented apartments Such property is more difficult to appraise and probably more variable in value than the owner-occupied home, which is the basis for a very substantial part of the outstanding mortgages The home owner is much more likely to make an effort to hold his property, even when his equity is little or nothing, than is the landlord of a purely commercial property The former supports his mortgage out of his personal income, the latter supports his bond issue from the rentals of the property

3 *Relative ease of adjusting default* In the event of default, the holder of an individual mortgage is in a position to make a quick adjustment by waiving principal payments or by reducing the interest rate according to the merits of the individual situation, in order to prevent foreclosure and its attendant ills Default

upon either interest or serial maturities of a bond issue would almost inevitably lead to a receivership, and to considerable negotiation and expense before a reorganization could be effected

4 *Aid from Home Owners' Loan Corporation and Federal Farm Mortgage Corporation.* Holders of mortgages were also aided by the operation of these two Government-supported organizations, which were designed to rescue the small-home owner and the farmer in distress Long-term loans of the amortization type were offered at low interest rates by these corporations where inability to pay had been shown by default on interest or principal Instead of cash, bonds that were readily salable were offered to the mortgagee for his defaulted investment Often the mortgagee was willing to compromise for less than the face of his debt, to obtain an immediate settlement in marketable, government-guaranteed bonds The desirable quality of these bonds will become more apparent after a description of them is given in the next chapter

**Public housing.** Before concluding this chapter, the subject of public housing deserves at least passing mention It is of interest here for its possible effects upon private investments in housing Any securities issued to finance public housing are more appropriately discussed as governmental securities The Housing Act of 1949 has made the subject of first-rate importance Although the act covers many matters, the chief provision is the one authorizing Federal Government assistance to municipalities for the construction of 810,000 housing units The competitive advantages that such public housing will have over private housing are three-fold (1) Temporary loans will be made by the Housing and Home Finance Agency to finance preliminary surveys and plans and to assemble the necessary land (slum clearance) for large-scale projects Up to two thirds of the land costs may be an outright gift (grant) to cover any excess of gross costs over the final appraised value of the land for its intended use This subsidy covers such items as demolition costs for old buildings and relocation of streets (2) Local housing authorities are created with power to finance the project by the sale of 40-year tax-exempt bonds, which means that the cost for capital return will be very low (3) The Federal Government, through the Public Housing Administration, will pay an annual subsidy to the local authority on the basis of need to keep rents down Rents must be 20 per cent less than the lowest rents on adequate private housing available in the given community To obtain this annual subsidy the municipality must exempt these projects from local taxes, although a voluntary contribution up to 10 per cent of the gross rents may be paid by the project in lieu of such local taxes

Such subsidized housing is a long-run threat to private housing Capital return and taxes are two of the most important elements of housing costs Subsidies at those two points give public housing a huge competitive advantage Moreover, a failure of public housing to bear the customary share of local taxes increases the already heavy tax burden upon private housing The transfer of middle-income tenants to public housing reduces by so much the demand for private housing These competitive threats, by frightening off private investment in housing, might reduce new private investment by a greater amount than the units supplied by public housing The need for housing is a large one Private housing already suffers various handicaps as a field of investment and the threat of subsidized competition could do much to worsen its position[29]

**Current mortgage situation** A review of the mortgage investment field discussed in this chapter shows it to fall into three broad divisions (1) the single-family dwelling, a large part of which is owner-occupied, (2) the multi-family rental dwelling, and (3) business housing for office, commercial, and industrial uses The field of individual homes is well supplied with mortgage credit largely by institutional investors—the life insurance company, the savings and loan association, and the savings and commercial banks Those mortgages, which are insured by F H A and the Veterans' Administration, are generously high in relation to the value of the property at the outset as a general rule The savings and loan associations may also make relatively high percentage loans, up to 75 per cent for the federally-chartered associations Where the personal credit of the borrower and the property is satisfactory, they prefer to make an uninsured loan and use the one-half per cent extra interest equivalent to the mortgage insurance premium to increase the association's own reserves against possible losses

With the passing of the real estate bond issue, so popular during the 1920's, new apartment buildings have been financed largely by low-interest (4 per cent), F H A insured mortgages for a large portion of cost (up to 90 per cent) Old properties are financed with uninsured mortgages made largely by life insurance companies It is in this field of rental apartment construction that public housing has entered as a factor to be considered by investors

Business housing has to rely on ordinary private credit and financing Only when occupancy and rents reach a level sufficient to offer a fair return on existing construction costs will new building for rental purposes take place Corporations building for their own use may use a part of their general corporate funds, sell securities, borrow on a mortgage, or use the new device of sale and lease-back The two latter types of instrument are sold mostly to life insurance companies

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[29] The important handicap of rent controls is ably discussed by Wendt, Paul F, "Effects of Federal Rent Control," *Appraisal Journal,* January 1950, pp 17–28

Because investment is a long-term proposition, investors will watch the influence of government-sponsored mortgage insurance and public housing with the closest attention Although the investor in insured mortgages has losses limited at most to certain foreclosure costs, the possible disorganization that such easy financing can bring to the real estate market by its stimulation will be a matter of general concern This threat has become more significant since the system, originally founded as an emergency depression measure to promote construction and employment, appears to have become a permanent feature of the mortgage market

Because mortgages make rather large units of investment and require care, they are more fitting as institutional than as individual investments Both national and local financial institutions have provided an excellent market Those institutions that feel a need for possible liquidity now have access to the Federal Home Loan banks, which serve member mortgage lending institutions, such as the savings and loan associations, by offering them lending facilities much as the Federal Reserve banks serve commercial banks However, mortgages are still most suitable for the relatively permanent institutional investor. The Federal National Mortgage Association has also been created to provide a market for insured mortgages Its purchases have been confined mainly to the Veterans' Administration (GI) loans, which at 4 per cent interest offer a half per cent less income than the 4½ per cent F H A loans

Regular loan amortization is a useful measure to increase the safety of both investor and borrower Nevertheless, if the rate is too low in the early years when the margin is low, the mortgage can be jeopardized by inadequate maintenance, a general price-level decline, or a drop in the market for houses that represents merely a reaction to building excesses or business depression Successful mortgage lending will continue to call for skill, alertness, and a knowledge of economic trends[30] Unfortunately, unsound financing in one sector of this field can create an unhealthy situation dangerous for all, as the events of the 1920's and 1930's demonstrated

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[30] For discussion of fundamental factors, see Reed, Vergil D "Population Trends and Changes in the Next Decade," *Appraisal Journal*, October, 1949

# 18

# United States Government Obligations and Instrumentalities

## Government Obligations

**Sources of government revenue** The Federal Government derives its revenues largely from taxes on the incomes of individuals or corporations, special taxes, such as duties levied on imports, excise taxes on the sale of certain kinds of commodities, fees and fines, occasionally revenues from the operation of government undertakings, such as the post office, and borrowing

It is true that what is borrowed ultimately must be paid back, at least, that is the original intention, except in the case of permanent loans, such as those represented by English consols and French rentes. Ultimately, therefore, taxes or other sources of revenue must be sufficient to take care of interest payments and the principal of government loans, if insolvency is to be avoided If borrowing is not a permanent source of revenue, it is logical to raise the question as to why it is used There are several answers to this question, depending on the condition surrounding the loan The first borrowing operations to be considered are those conducted during times of great stress, such as a war Expenditures at such times are abnormally large—far beyond current revenues It may appear expedient to borrow a part of the necessary funds rather than to impose confiscatory taxes and cause undue financial strain In this way costs are deferred and are borne by the taxpayers of a future period Some economists point out that fundamentally all the goods and services wasted in a war are created in and are a cost to the period in which the war takes place, and, were it not a matter of political expediency, the soundest course would be to pay that cost as it is incurred and so avoid creating claims upon one part of the community in favor of another part through bond issues.

Government borrowing may also be directed toward the construction of permanent improvements. It is expected that future generations will receive at least part of the benefit of such improvements and consequently may justly be expected to pay in part for them. Through borrowing operations the cost of these improvements is thus spread over a term of years and is met as the bonds fall due. Furthermore, if such improvements enhance the wealth of the community, as do roads and schools, the additional taxes may constitute no real burden. A third occasion for borrowing may arise when improvements that are expected to be self-supporting, such as the Panama Canal, are built. Finally, borrowing, by means of short-term notes, in anticipation of current taxes is a means of spreading government income equally over the entire year.

**History of public borrowing.** Public borrowing is by no means confined to the present generation. As far back as the Middle Ages the Italian cities floated public loans, while borrowing by English kings was common before the fourteenth century. Such uncertainty surrounded early government borrowing that loans of this nature were often considered as forced loans. Thus, in England, under Edward IV and the Tudors, the exaction of compulsory loans from wealthy subjects became a frequent and almost regular expedient of the Crown. Under Henry VIII, Parliament was twice called upon, in 1529 and 1544, to convert the public loans outstanding into benevolences by formally releasing the king from the obligation of payment. During Elizabeth's reign, however, the public debts were paid more promptly, and, after the passing of the Tudors, public credit was gradually improved.

**Early debt history of United States.** The history of our national debt since 1789 has been singular in that this country has never permanently defaulted in the payment of interest or principal of any of its debt. The Treasury Department, created in 1789, faced a national debt of $52,788,222, to which should be added the debts of the several states, amounting in all to about $25,000,000.[1] State debts were assumed in order to induce the states to join the new Union. This total appears small today, but it was a large sum for that generation. In 1803 a subsequent loan of $11,250,000 was floated to finance the Louisiana Purchase, yet, by 1812, the total national debt had been reduced to approximately $45,000,000.

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[1] The indebtedness of the United States, on January 1, 1789 including arrearage in interest was *

Despite the fact that the war with Great Britain, which lasted from 1812 to 1814, resulted in an increase in total debt to $127,000,000, this entire amount was paid off by 1835 [2] The net indebtedness created by the Mexican War (1846–1848) was $49,000,000 These loans, bearing 6 per cent interest, were floated at par or higher On July 1, 1851, the debt stood at $68,304,796, whereas by 1857 the net debt had been reduced to $9,998,622 Increased borrowings were occasioned by the panic of 1857, with the result that the debt increased to $59,964,402, on July 1, 1860 [3]

**Debt history from Civil War to World War I** The extraordinary demand for funds occasioned by the Civil War brought the amount of interest-bearing debt up to $2,322,116,330 at the end of the fiscal year 1866 [4] At the end of that war a large part of this debt was in the form of short-term paper which was overdue In fact, less than one half of the existing debt was actually funded, while such part of it as was funded consisted of a variety of issues, each bearing a different rate of interest and each surrounded by complicated terms and conditions as to duration, option, conversion, extension, and renewal [5] Upon assuming the office of Secretary of the Treasury in March, 1869, G S Boutwell proceeded with a comprehensive plan of refunding and consolidating the then complicated debt structure of the Government and of reducing interest charges This undertaking was accomplished under the Refunding Acts of 1870, 1871, 1873, and 1875 Considerable difficulty was experienced in marketing the first issues brought out under these acts, because interest and principal were payable in "coin" In view of the growing movement toward inflation just

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|---|---|
| Principal of Foreign Loans | $10,098,706 02 |
| Due France for Military Supplies | 24,332 86 |
| Arrears of Interest to Jan 1, 1790 | 1,760,277 08 |
| Debt Due Foreign Officers | 186 988 78 |
| Arrears of Interest to Jan 1, 1790 | 11,219 32 |
| Principal of Domestic Debt (est) | 28,858,180 65 |
| Arrears of Interest to Jan 1, 1790 | 11,398,621 80 |
| Arrears and Claims (subsequently discharged) | 450,395 52 |
| Total | $52,788,722 03 |

[*] Data taken from Raymond, W L, *American and Foreign Investment Bonds* (Boston Houghton Mifflin Co, 1916), p 42

[2] Except for a small balance of $328,582, which remained unpaid because payment had not been demanded

[3] *Financial Review*, 1915, p 90

[4] *Annual Report of the Secretary of the Treasury for the Fiscal Year Ended June 30, 1927*, p 514

[5] Dewey, D R, *Financial History of the United States* (New York Longmans, Green & Co, 11th ed, 1931), pp 331 ff

prior to this time, it was feared that payment might be made in greatly depreciated paper currency With the passage of the Resumption Act in 1875, and with judicious management of fiscal problems by the Treasury, the national credit greatly improved The quotations on all national issues advanced rapidly thereafter A large portion of the Civil War debt was reduced in the 15 years following 1875, and by 1890 the total interest-bearing debt stood at only slightly over $700,000,000[6] The unfortunate experiences that the Treasury met in the matter of gold withdrawals during the 1890's necessitated more borrowing The Spanish-American War brought a further increase in national debt, with the result that the total interest-bearing debt on June 30, 1899, amounted to $1,046,048,750[7]

The construction of the Panama Canal was financed partly by bond issues The acts of June 28, 1902, and December 21, 1905, provided for an issue not to exceed $130,000,000 of 2 per cent bonds to mature in thirty years, but to be callable in ten years Of this amount $84,631,980 was actually issued at two different times at prices averaging 103 513 and 102 436 In 1909, 1910, and 1911, acts were passed providing for an issue of $290,569,000 of 3 per cent bonds, maturing in 1961 Only $50,000,000 of bonds were issued under these acts at an average price of 102 582[8] These 3 per cent bonds, however, were not eligible as security for national bank notes, as were the 2 per cent issues

**Prices of Government bonds.** The prices of Government bonds from 1863 to 1913 were influenced by our national banking laws For many years prior to World War I the securities of our Government sold at prices so high that their yield to the ordinary investor was unsatisfactory This was not true during the very early period in our national history, when the question of state rights was being settled and when the ultimate fate of our central government was not assured, or during the trying period of the Civil War Indeed, during the War of 1812, United States bonds were issued on a basis of from 7 to 8½ per cent, whereas during the Civil War they sold on a basis as high as 12 per cent[9]

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[6] *Annual Report of the Secretary of the Treasury for the Fiscal Year Ended June 30, 1927,* p 514

[7] *Ibid* See below, p 525, for prices of Government bonds from 1873 to 1912

[8] *Ibid*, p 505

[9] The reasons for such high rates of interest on Government bonds during the Civil war lay partly in the uncertainty regarding the outcome of the war and partly in the depreciation that took place in the greenback currency that was issued at that time All banks, and the Government itself temporarily suspended specie payments Large issues of inconvertible paper money caused depreciation in terms of gold The prices

The passage of the various acts, during and shortly after the Civil War, designed to create a national currency secured by a pledge of United States bonds (commonly referred to as the National Bank Acts), the successful termination of the struggle for national supremacy, and the passage of the Resumption Act in 1875 had the effect of raising the price of Government bonds and of reducing their yields Indeed, it is necessary, in order to explain the extremely low yields at which Government bonds have averaged to sell, especially since 1875, to understand in some detail the national banking system in effect prior to the date when the present Federal Reserve System became operative

The original act, designed to create a national currency secured by the pledge of Government bonds, was approved February 25, 1863 This act, as amended in 1864, provided for the issue by national banks of not over $300,000,000 of circulating notes (that is, to be used as currency), to be secured by United States bonds deposited with the Treasurer of the United States [10] The act was further amended in 1865 by placing a prohibitive tax on notes issued by state banks, with the result that such notes were driven from circulation [11] The effect of this legislation was to create a demand for United States bonds among national banks, such bonds to be used as the basis for the issuance of bank notes, and to raise the market price of such bonds Although modifications in these acts were made from time to time, our system of bank note issue

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of Government bonds, the purchase of which then involved the chance of ultimate payment in paper currency, likewise declined to low points The following prices of United States 6 per cent bonds, due in 1881, may be of interest in this connection

PRICES OF U S 6's, 1881*

| *Year* | *Low* | *High* |
|---|---|---|
| 1861 (outbreak of war) | 84½ (April) | 94 (April) |
| 1861 | 83 (June) | 95¾ (October) |
| 1862 | 87½ (January) | 107¼ (June) |
| 1863 | 91¾ (January) | 110¾ (October) |
| 1864 | 102 (July) | 118 (April) |
| 1865 | 103½ (March) | 112⅜ (January) |

* Data from Raymond, W L , *American and Foreign Investment Bonds* (Boston Houghton Mifflin Co , 1916), p 46

[10] See 12 Statutes at Large, 665, and 13 Statutes at Large, 99 An Act to provide a National Currency, secured by a Pledge of United States Bonds and to provide for the Circulation and Redemption thereof Originally, every National bank was required to purchase certain amounts of United States bonds

[11] See 13 Statutes at Large, 469

"Section 6 *And be it further enacted,* That every national banking association, State bank, or state banking association, shall pay a tax of ten per centum on the amount of notes of any state bank or state banking association, paid out by them after the first day of July, eighteen hundred and sixty-five " prior to 1914 was based on the deposit of Government bonds with the Treasurer of the United States The prices of Government bonds prior to 1913, therefore, were determined largely by the profits that could be made by banks by putting bank notes into circulation, and not directly by money conditions or by the state of Government credit[12] With the growing need for bank notes as a circulating medium and with the reduction in the national debt after the Civil War, it is not surprising to find that certain Government issues advanced so rapidly in price that by 1876 they sold on a yield basis of 1 53 per cent[13] For many years prior to 1913 Government bonds consistently sold at prices substantially above those of other high-grade securities Demand by national banks wishing to secure the circulation privilege, and not investment character, determined the abnormally low yield The table on the next page shows the relative yield of Government securities as compared with the yield of high-grade railroad bonds and commercial paper rates for the period from 1890 to 1909[14]

**Effect of Federal Reserve System on market for Government bonds** In 1914 the Federal Reserve banks were created in order to remedy some of the weaknesses of our unit banking system, especially to provide an elastic supply of bank note currency and a place for banks to borrow in emergencies The Federal Reserve Act, however, did not at once do away with the old system of note issue by national banks secured by certain "circulation privilege" issues, with the result that bonds outstanding prior to 1914, except the Panama 3's of 1961, continued to enjoy a special market until their final retirement in 1935 On the other hand, all Government issues brought out subsequent to 1914 have sold on the basis of their merits as high-grade investments and of such tax-exempt features as they enjoyed Their prices have from time to time re-

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[12] All issues of United States bonds, except the Panama 3's of 1961, were available as security for note issue under the pre Federal Reserve System

[13] Raymond, W L, *American and Foreign Government Bonds* (Boston Houghton Mifflin Co, 1916), p 77

PRICES OF GOVERNMENT BONDS 1873–1912

(Yield basis)

| *Security* | *Period* | *High* | *Date* | *Low* | *Date* |
|---|---|---|---|---|---|
| 6% 1881 | 1873–1882 | 1 53% | June 16, 1876 | 4 50% | October 17, 1873 |
| 4% 1907 | 1883–1892 | 2 08 | March 29, 1889 | 2 94 | June 23, 1884 |
| 4% 1907 | 1893–1902 | 1 58 | March 14, 1902 | 3 39 | August 7, 1896 |
| 4% 1925 | 1903–1912 | 1 93 | October 13, 1905 | 2 80 | June 15, 1910 |

[14] Mitchell, W C, "Rates of Interest and the Prices of Investment Securities, 1890–1909,' *Journal of Political Economy*, April, 1911, pp 269–308

RATES OF INTEREST ON BONDS AND COMMERCIAL PAPER IN NEW YORK 1890–1909

| *Year* | *U S 4's of 1907 and 1925* | *Average of 10 Railroad Bonds* | *4 to 6 Months Paper* |
|---|---|---|---|
| 1890 | 2 43 | 4 72 | 6 89 |
| 1891 | 2 65 | 4 85 | 6 50 |
| 1892 | 2 80 | 4 64 | 5 38 |
| 1893 | 3 04 | 4 75 | 7 62 |
| 1894 | 2 79 | 4 59 | 5 22 |
| 1895 | 2 89 | 4 48 | 5 73 |
| 1896 | 3 14 | 4 54 | 7 02 |
| 1897 | 2 73 | 4 38 | 4 72 |
| 1898 | 2 69 | 4 21 | 5 31 |
| 1899 | 2 47 | 3 96 | 5 48 |
| 1900 | 2 18 | 3 95 | 5 71 |
| 1901 | 1 97 | 3 79 | 5 41 |
| 1902 | 1 98 | 3 77 | 5 75 |
| 1903 | 1 99 | 3 96 | 6 21 |
| 1904 | 2 09 | 3 92 | 5 13 |
| 1905 | 2 00 | 3 82 | 5 17 |
| 1906 | 2 04 | 3 94 | 6 24 |
| 1907 | 2 18 | 4 22 | 6 55 |
| 1908 | 2 44 | 4 16 | 4 95 |
| 1909 | 2 52 | 4 00 | 4 67 |

ceived artificial support from Treasury and from Federal Reserve bank buying Such support, however, even though concentrated on United States Government obligations, tends to influence the whole body of bond yields and interest rates and to keep them all at a lower level than would otherwise be the case

The Federal Reserve Board has stated that it deems it to be in the public's interest that the banks should "exert their influence toward maintaining orderly conditions in the market for United States Government securities While the system has neither the obligation nor the power to assure any given level of prices or yields for Government securities, it has been its policy in so far as its powers permit to protect the market for these securities from violent fluctuations of a speculative, or panicky nature "[15] Although the Federal Reserve banks were created as an adjunct to the commercial banking field, an exception was made in favor of United States obligations not only permitting these banks to buy and sell them in the open market but also allowing loans to member banks upon them or on paper secured by them. On September 1, 1939, when World War II caused market declines, it was announced that Federal Reserve banks stood ready to make advances on Government securities to member and non-member banks at par without regard to market value.

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[15] *Twenty-sixth Annual Report of the Board of Governors of the Federal Reserve System* (1939), p 5

**Government borrowing during World War I.** The prosecution of the first World War necessitated expenditures on a scale of unparalleled magnitude for this country. At the outbreak of the war in 1917 it was generally felt that at least one half the cost of the war should be financed by taxation, and to this end war taxes were put into effect that greatly increased Government revenues from that source. Nevertheless, it was necessary to raise unprecedented amounts by the issue of bonds. The act of April 24, 1917, conferred authority on the Secretary of the Treasury to issue $5,000,000,000 of long-term, nontaxable bonds at a rate of interest not to exceed 3½ per cent. The total amount of bonds issued under this act was $1,989,455,550. This issue of bonds, which was dated June 15, 1917, was known as the First Liberty Loan. The act of September 24, 1917, with its numerous amendments, was the authority for all subsequent war borrowing. The long-term bonds issued were the First, Second, Third, and Fourth Liberty Loans, with some of the bonds of the first two issues converted into bonds with a higher coupon rate, as a result of a conversion privilege in those issues. Only the unconverted First Liberty Loan 3½ per cent bonds, however, were wholly exempt from the Federal income tax. The other issues had varying degrees of exemption, which depended upon the amounts held, the manner of purchase, and the year for which income was being taxed.[16]

The remaining war borrowing was accomplished by issues of short-term securities, primarily certificates of indebtedness and the Victory Notes.[17] The debt of the United States increased rapidly in both size and complexity as a result of the war. From a total of less than a billion dollars prior to the war, the interest-bearing debt rose to a peak of $26,349,000,000 on August 30, 1919. The character of this debt may be seen in the following condensed statement:

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[16] For detailed descriptions of the various Liberty Loan issues and of the short-term obligations issued during the war, see the annual reports of the Secretary of the Treasury.

[17] Although the Victory Notes were not issued until several months after the signing of the armistice, they are considered as war borrowing, because the proceeds were used for war purposes and because they were issued before the highest peak of wartime indebtedness was reached.

INTEREST-BEARING DEBT OF THE UNITED STATES
OUTSTANDING AUGUST 31, 1919*

| *Title of Loan* | *Amount* |
|---|---|
| War and postwar loans | |
| Liberty Loan bond issues (3½'s, 4's, 4¼'s) | $16,219,399,300 |
| 3¾–4¾'s, Victory Liberty Loan | 4,113,404,611 |
| 4's, War Savings and Thrift Stamps | 931,332,420 |
| 4½'s, Certificates of Indebtedness | 3,938,295,000 |
| 2's, Certificates of Indebtedness | 262,914,050 |
| Prewar issues | |
| 2's, Consols of 1930 | 599,724,050 |
| 4's, Loan of 1925 | 118,489,900 |
| Panama Canal Loans | |
| 2's of 1916–36 | 48,954,180 |
| 2's of 1918–38 | 25,947,400 |
| 3's of 1961 | 50,000 000 |
| 3's, Conversion Bonds, 1946 and 1947 | 28,894,500 |
| 2½'s, Postal Savings Bonds (1st to 16th series) | 11,453,100 |
| Total | $26,348,808,511 |

* *Commercial and Financial Chronicle*, April 24, 1920, p 1721

**Since World War I** After August, 1919, the close of each fiscal year showed a reduction in the interest-bearing debt of the United States until on June 30, 1930, the total stood at $15,922,000,000 [18] The ordinary sinking fund provided by law would have retired about $3,181,000,000 during this period, but recurrent Treasury surpluses provided for a much more rapid retirement [19] From time to time refunding operations by the issuance of Treasury bonds reduced the rate of interest paid during this period

In fiscal years following 1930, the debt increased as a result of the emergency growing out of the depression The chief emergency expenditures were unemployment relief in various forms as administered through the Federal Emergency Relief Administration, the Civil Works Administration, the Emergency Conservation Work, and various public works projects, and in the form of financial advances to distressed corporations and individuals through the Federal Farm Mortgage Corporation, the Home Owners' Loan Corporation, and the Reconstruction Finance Corporation It was hoped that this deficit financing would relieve unemployment, restore confidence in financial institutions, check price deflation, and stimulate business The federal debt rose from $16 billion in 1930 to over $40 billion in 1940, or an amount very similar to that incurred in the financing of World War I

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[18] *Annual Report of the Secretary of the Treasury, for the Fiscal Year Ended June 30, 1930*, p 13

[19] *Ibid*, p 58

The form of interest-bearing obligations outstanding in the latter year and at the end of 1949 are shown in the accompanying table

The defense program began in June of 1940, even though Pearl Harbor was not attacked until the end of 1941 Government expenditures increased sharply until after the close of the war in 1945 At the end of February, 1946, following the Victory Loan, the direct interest-bearing federal debt reached a peak of $278 billion During the calendar year 1946, this debt was reduced by $19 billion but it was chiefly through the use of excess cash balances arising from this last loan to pay off other kinds of obligations (Cash balances were reduced by $22 5 billion, mostly for debt reduction, the difference being accounted for by a Treasury deficit of $2 5 billion and trust account operations of a billion ) Subsequent fluctuations have resulted from Treasury surpluses and deficits While these have been moderate relative to total debt and total budget, they are nevertheless large absolute amounts The federal debt has not only become the largest element in our debt investment market but its fluctuations are a most important market factor, sometimes overshadowing other factors

INTEREST-BEARING DEBT OF THE UNITED STATES 1940, 1949*

(Millions)

| | *June 30, 1940* | *Dec 31, 1949* |
|---|---|---|
| Treasury Bonds | $26,555 | $105,712 |
| Treasury Notes | 6,383 | 15,859 |
| Treasury Certificates | None | 29,636 |
| Treasury Bills | 1,302 | 12 319 |
| United States Savings Bonds | 2,905 | 56,707 |
| Other Bonds | 457 | 890 |
| Debt Not in Hands of Public† | 4,775 | 33,896 |
| Total | $42,377 | $255,019 |

* Daily Statement of U.S Treasury, June 29, 1940, p 5, Jan 3, 1950, p 5
† Old Age retirement fund, unemployment trust fund, etc

The foregoing condensed statement of interest-bearing debt groups issues on a basis that brings out different investment characteristics

**Investment characteristics of Federal obligations** The various types of Federal obligations will be considered in the paragraphs below

*Treasury bonds* Bonds are the long-term obligations of the Government They are issued with a maturity of five years or longer but ordinarily have a maturity of not less than ten years. Unlike some foreign governments, the United States has no perpetual maturities, although it formerly had outstanding the Consol 2's of 1930, which were payable at par at the option of the Government any time on or after 1930 The issue was called in 1935 Treasury bonds differ chiefly from the Treasury notes, certificates, and bills in the matter of maturity Because of long maturity, they fluctuate more in price, which characteristic is a disadvantage to those who might need to realize upon their investment at short notice Some of the possibilities of Treasury bonds may be judged by reviewing some of the major price swings of the Treasury 4¼'s of 1947–1952 The fluctuations in a single year have often been larger than the ordinary income from the coupons (Fluctuations after 1940 reflected the steady downward pull of approaching maturity and so were less useful for the purpose of reflecting the influence of fluctuating market return )

| *Date* | *Price** |
|---|---|
| October, 1922 | Issued at 100 |
| January, 1928 | Reached a High of 116 3 |
| March, 1929 | Low — 105 |
| June, 1931 | High — 114 8 |
| January, 1932 | Low — 98 30 |
| December, 1936 | High — 121 28 |
| April, 1937 | Low — 114 |
| June, 1939 | High — 122 12 |
| September, 1939 | Low — 113 18 |
| December, 1940 | High — 122 20 |

* Figure after decimal represents 1/32's

The Treasury bonds consist of a number of issues with a variety of coupon rates and maturities The coupons vary because of the Treasury practice of selecting at the time of issue a coupon rate that permits an offering at the exact price of par [20] Most of the issues have an optional maturity date, after which the Government may call the issue if it so chooses Thus, the Treasury 4¼'s mentioned above had a maturity of 1952 and an "optional maturity," or call date, in 1947, at which time the Government could call the bond at par The investor expects the option of call to be exercised whenever the Government can refinance at a lower rate than the coupon or has surplus cash available for debt reduction

During World War II, the Treasury created what came to be known as the "bank-restricted" bond issues Beginning with the first issue in May, 1942, commercial banks were not permitted to buy these bonds, save in limited amounts as they had time deposits Savings banks and life insurance companies were the principal buyers Such longer maturities because of the greater possibilities of price fluctuation are unsuitable for the investment of demand deposits Because of the importance of the commercial banks in the Government market, these bank-restricted bonds have characteristically sold at higher yields than similar bank-eligible issues As the time approaches for a given issue to become "eligible," its yield based on market price tends to move toward that of corresponding unrestricted bonds

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[20] The offering of $100,000,000 of Treasury 3's of 1946–1948 on May 27, 1935, by competitive bids that resulted in a sale at an average price of 103 4/32 to yield 2 67 per cent, represented an experiment that might be adopted to the profit of the Treasury *Commercial and Financial Chronicle*, June 1, 1935, p 3650 The last previous bond issue sold in this manner was the Panama 3's of 1961, offered in March, 1911

In August, 1947, the Treasury offered a special nonmarketable Investment Series of bonds, 2½'s of 1965 These were designed as a permanent holding to maturity, although after six months the holder could redeem at a discount price, which would result in a yield lower than the coupon but equivalent to what might have been earned on short maturity obligations Thus, after eight years the redemption price was less than 93, and the yield for the period would be 1 64 per cent The issue was much like the Series G Savings bonds described below but available in unlimited amounts This Investment Series has not been offered again

Another minor bond issue is the Panama 3's of 1961, which now enjoy the unique distinction, along with the 2 per cent Postal Savings bonds, of being the only remaining Federal issues that are fully exempt from income taxes [21]

*Treasury notes, certificates, and bills* Treasury notes resemble bonds in most respects except that their maturities are more than one but less than five years Treasury certificates are also similar for the most part to bonds, but differ in that they have maturities of one year or less Treasury bills have a maturity of one year or less but most often between 90 and 92 days They are issued without coupons, like a non-interest-bearing promissory note. An issue is offered for public subscription and allotted to those who will accept the smallest discount—that is, the lowest yield

The shorter the period an obligation has to run to maturity, the more stable its market price Consequently notes, certificates and bills are particularly sought by investors desiring the maximum of liquidity They have a stable price and the best of market-

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[21] The issuance of Postal Savings bonds was discontinued in 1935 Maturing 20 years after issuance, the last of these mature in 1955 They are redeemable at any time at par at the option of the holders They were succeeded by the Savings bonds described later.

The income from $5,000 principal amount of Treasury bonds and Savings bonds issued prior to March 1, 1941, is also wholly exempt from income taxes ability Called bonds, bonds or notes close to maturity, and bonds or notes that have a nearby optional maturity and a coupon sufficiently high so that call becomes likely will all be treated by the investor as short-term commitments

As regards yield characteristics, Treasury bonds will move with the general high-grade bond market, which shows less fluctuation in rate of return than the prime commercial paper market Yields from short-term Government obligations reflect short-term money market conditions, the primary field of commercial bank operation In both the long- and short-term money markets, Government obligations show yields lower than those for private obligations This difference is due partly to tax status and partly to the breadth and firmness of the market for Government bonds, which is invaluable in times of stress to large commercial banks In an emergency the market for Government obligations can count upon open-market support from the Federal Reserve banks

Since yields for bonds are more stable than for short-term loans, we find that from 1920 on, coupon rates of Treasury bonds have ranged from 4¼ to 2 per cent, while similar rates for certificates have ranged from 6 to 25 per cent

*Savings bonds* In 1935, the Savings bond replaced the former Postal Savings bond and has continued under various series and titles since [22] They have all been substantially the same in form The present bonds are known as Series E They are widely popular and although sold only to individuals in limited amounts they have grown to rank with the time deposits of commercial banks in importance They are issued for a period of ten years without coupons on a discount basis Thus, a $1,000 par bond would be issued at $750, at which price the yield to maturity is 2 90 per cent compound interest The bonds are redeemable at the option of the holder at any time after 60 days at a gradually increasing price No income results till a bond has been held for one year In the early years, the increasing redemption value represents a very low return, in the later years, over 4 per cent These bonds may be obtained in denominations of $25, $50, $100, $500, and $1,000, but not more than $10,000 of bonds of face value may be purchased by one person in any one year, and they are available only to individual buyers

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[22] The Postal Savings *deposit* system has been continued It increased in popularity after the numerous bank closings in the early 1930's Total deposits are limited to $2,000 for one person and interest is allowed at the rate of 2 per cent per annum, paid annually, except in the state of New Jersey, where the rate is one per cent Total deposits reached a peak in 1947 just short of $3 5 billion

To absorb the savings of more substantial investors, two other types, Series F Appreciation Plan Savings bonds and Series G Income Plan Savings bonds are offered to an aggregate amount of not more than $50,000 to any one purchaser in any year. The Series F bonds are much like the Series E Savings bonds just described in that they are sold at a discount, are non-transferable, and are redeemable with the Government at the holder's option. Their yield is but 2.53 per cent to maturity, they are sold at 74 and mature in 12 years. The Series G bonds pay a cash return of 2½ per cent but if redeemed before their maturity at the end of 12 years they are worth less than the original purchase price of par so that the net yield is less than the nominal rate unless the bond is held for the full term. On the basis of redemption values, Series F and G must be held for 5 years and the Series E bonds for 3½ years before a net yield of 1½ per cent, about the lowest savings bank interest rate, is earned.

*Other nonmarketable issues.* The Treasury also offers three-year, non-transferable Savings notes (Series D currently), which are issued at par and are redeemable at a rising premium. At present, this premium constitutes a yield ranging from 0.98 per cent for the first six months to 1.40 per cent if held to maturity. During and after the second calendar month after purchase, they may be presented in payment of Federal income, estate, and gift taxes at their redemption value. During and after the fourth month, they may be presented without notice for redemption in cash. Consequently, they serve either for short-term savings or for accumulating sums for future taxes. Commercial banks will be paid a premium only when they use them in payment of taxes.

The relative importance of the various kinds of Government obligations may be had from the table on page 529 above. The marketable obligations sold to the public, consisting of Treasury bonds, notes, certificates, and bills, totalled $155 billion at the end of 1949, the nonmarketable obligations also sold to the public, chiefly in the form of Savings bonds, amounted to $66 billion, special nonmarketable issues sold to various Government funds, $34 billion.[23] (In the table, Treasury bonds include $1 billion nonmarketable investment series bonds and Treasury notes include $8 billion nonmarketable Treasury savings notes.)

**Yield characteristics.** Reference has already been made to the difference in yields among the various maturities of United States obligations Since the 1920's there has been a characteristic, though varying, pattern of yields with lower yields for the short and higher yields for the long maturities This relationship between the short-term money market and the long-term bond, or capital, market is discussed further in Chapter 25 Two points may be made here as to (1) the logic and (2) the fluctuations of these differences Because the shortest maturities have had a lower yield for so long, some have come to regard it as a permanent situation They explain this lower return as the result of the willingness of commercial banks to accept less yield to obtain the greater price stability of short maturities They need liquidity to balance their demand deposit liabilities Long maturities are bought more largely by institutions and individuals able to ignore the greater price fluctuation of bonds because their primary need is for income and fairly permanent investment rather than liquidity

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[23] Special nonmarketable issues not available to the investor are sold by the Treasury to various Government agency and trust funds. They are issued chiefly to the Federal old age and survivors insurance trust fund, National service life insurance fund, Unemployment trust fund, Civil service retirement fund, Railroad retirement fund, and the Postal Savings system.

Prior to 1930, however, short-maturity yields often rose above long-maturity yields, although the average return from the two fields was fairly similar for the first three decades of the century This may be seen in Figure 22 (Chapter 25) where the short-term rate is represented by prime open market commercial paper and the long rate by high-grade bond yields Consequently, the efforts of the Federal Reserve banks to preserve the pattern of low yields for short maturities in the postwar boom represented the preservation of what was formerly regarded as a yield-maturity pattern for depression years The lower rate in depression tends to attract borrowers to the banks and encourage "debt monetization," a policy ordinarily regarded as economically desirable in such a period The higher rate demanded by banks in boom represented the contrary influence. Fully as important as the high rate was the limit on credit expansion of which the high rate was a reflection

In order to keep interest rates low for the benefit of the Treasury, the Federal Reserve banks have from time to time given buying support to Government securities Such buying kept the cost of financing low Instead of allowing interest rates to rise when credit restraints have been desirable these banks have relied more upon such measures as warnings to business and banks, changes in the required reserve ratios of commercial banks, and direct restrictions on installment credit and stock market loans However, with the business community and individuals holding large amounts of Government obligations in the postwar years, an easy market for Governments was the equivalent of easy credit for the holders of such obligations The business community remembered the harsh lesson of the speculative boom after World War I and showed self-restraint after 1945 Inventory speculation was avoided Certain major industries, such as steel, automobiles, and petroleum, accepted lower prices than the grey markets indicated they might have exacted Such price inflation as did follow World War II was consequently the delayed result of bank credit expansion during rather than after the war years Demand deposits and currency were held fairly steady in the years immediately following 1945 until after war broke out in Korea in 1950, in spite of a vigorous policy by the Federal Reserve of supporting the price of Governments This support was extended even to long-term bonds, including the issues not eligible for bank investment, in 1947 and 1948 Federal Reserve holdings of Treasury bonds with maturities of ten years and over rose from only $78 million in June, 1947, to $7,215 million at the end of 1948[24]

A discussion of the economics of federal fiscal policy, of debt management, and of monetary management would be beyond the scope of this chapter Nevertheless they all constitute a vitally important background for the investor We can only emphasize here the importance of Federal Reserve policy in its influence upon the level of interest rates and the yield-maturity pattern The Federal Reserve, in turn, gives great weight to the financing needs of the Treasury, our largest debtor The huge stream of savings directed into the field of debt investment make a low level of interest rates natural Were it otherwise, the easy credit brought about by supporting the market for Governments during the 1940's would have led to far greater bank credit expansion and price inflation, the extent of which would have been governed largely by the excess of borrowing over the savings available to the borrowers. The remarkable increase in our production should also be mentioned as an important factor restraining inflation

**Distribution of Government obligations** The different investment requirements of the various classes of investors explain the varying kinds of obligations held by them The accompanying table showing the maturities held by these various groups reveals two broad divisions In general, the short maturities, running one year or less, and to some extent those running from one to five years in the intermediate group are favored by the commercial banks, by fire and casualty insurance companies, and by business corporations needing a temporary investment of funds held for emergencies, for taxes, and for other near-term purposes Ordinarily, the Federal Reserve banks would be expected to fall within this group More permanent investment and higher yields are sought by the life insurance companies, mutual savings banks, individuals, and trust funds Commercial banks holding savings deposits would also have a place for long-term bonds in their portfolio Individuals find both yield and liquidity available in the nonmarketable Savings bonds as corporations do in the three-year nonmarketable Savings notes

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[24] *Federal Reserve Bulletin,* May, 1949, p 554 For a discussion of this problem see Poole, Kenyon E, *Fiscal Policies and the American Economy* (New York Prentice Hall, Inc, 1951), especially Chapters II, IV and VI

MATURITY DISTRIBUTION OF MARKETABLE U S OBLIGATIONS HELD

December 31, 1949

(Billions of Dollars)

| | | | | Marketable bonds | | |
|---|---|---|---|---|---|---|
| | *Total* | *Treasury Bills* | *Certificates* | *Under 1 year* | *1–5 years* | *Over 5 years* |
| Commercial banks | 59 9 | 3 5 | 11 5 | 9 0 | 24 9 | 10 9 |
| Federal Reserve Banks | 18 9 | 4 8 | 6 3 | 0 9 | 1 9 | 4 9 |
| Insurance companies | | | | | | |
| Life | 14 6 | — | 0 1 | 0 2 | 0 8 | 13 5 |
| Fire, casualty, and marine | 3 9 | — | 0 5 | 0 3 | 0 8 | 2 2 |
| Mutual savings banks | 10 8 | — | 0 2 | 0 2 | 1 1 | 9 3 |
| Others | 41 8 | 3 9 | 11 0 | 3 7 | 5 3 | 17 8 |
| U S Govt agencies and trust funds | 5 3 | — | — | — | 0 2 | 5 0 |
| Totals | 155 2 | 12 2 | 29 6 | 14 3 | 35 0 | 63 6 |

Source *Treasury Bulletin*, March 1950, pp 33, 35

**Tax status** All United States obligations issued after the Public Debt Act of 1941 that became effective on March first of that year have been subject to all Federal taxes although they continue to be free from local taxes Of the pre-1941 debt only the Panama 3's of 1961 and Postal Savings bonds are wholly exempt from income taxes More important to the investment market is the exemption of Treasury bonds issued before 1941 from normal taxes but not surtaxes So important is this to commercial banks and other corporation investors that bond quotations are often accompanied by figures of the net yield available after taxes (that is, for corporations) so that the net yields after income tax for each Treasury bond may be more readily compared[25]

**Basis of government credit** Government bonds, as distinguished from bonds of private corporations, represent loans that the legally constituted authorities of the government covenant and promise to pay on specified conditions Contracts of this nature that are entered into between sovereign powers and private individuals differ in fundamental respects from contracts between individuals In the event of failure on the part of a participant in a private contract to live up to the terms thereof, the remaining parties have the right to apply to the courts for satisfaction If it appears that the other parties to the contract have been injured by the acts or omissions of the party breaking the contract, the court will afford relief against such a party by giving a judgment against the defendant and in favor of the plaintiff Thus, when a private individual contracts to pay interest and principal on a loan and fails to do so, the lender may take the action to court and get a judgment against the borrower This judgment gives the lender the right to attach all the property of the borrower located within the court's jurisdiction In contracts with a sovereign power, such as the United States, with any of the states of the Union, or with a foreign state, the right of an individual to sue is lacking In other words, it is beyond the power of any individual to bring ordinary legal compulsion to bear against an unwilling debtor, if the debtor is a sovereign government

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[25] The topic of taxation is discussed in Chapter 24

It is also true that, ordinarily, there is no specific security behind government bonds For the payment of principal and interest of bonds issued by some of the weaker foreign powers, there is sometimes a pledge of certain sources of revenue, such as customs duties, profits, or royalties from domestic monopolies, and the like, but this pledge is entirely different from the pledge of property under a mortgage After all, if the borrowing power decided subsequently to sequester such sources of revenue by force, it might do so and the creditors would be powerless to object, unless the assets were in the custody of the creditor nation, or unless force was brought to bear by the creditors' government

In view, therefore, of the very weak legal position of the holder of government bonds, it is customary to attribute a large part of their investment value to the willingness of the sovereign power to pay Its good faith is, indeed, a factor of the utmost importance It is not advisable, however, entirely to overlook the ability of the borrowing power to pay, for, after all, the degree of willingness may depend in a large measure on the ease with which payments can be made A study of defaults in government obligations will almost invariably show that such defaults were really the result of the inability of the government to meet its obligations without the levying of very heavy taxes, with consequent hardship to its citizens

Few politicians and few statesmen have the necessary courage to urge the passage of tax laws that are onerous The investor, therefore, in considering government bonds, must weigh the reputation that the government has for promptly fulfilling its promises, as well as the relation of the total debt of the issuing power to its revenues, its wealth, and its income

**Position of United States bonds** Bonds of the United States are in no different legal position from bonds of any other sovereign power Their safety depends on the willingness of the people, as expressed through our Government, to meet their national obligations, and upon the ability of the nation to pay The record of this country in meeting its obligations has been an excellent and exceptional one [26] Because of the relatively great wealth and prosperity of the United States, an elaborate financial analysis of the general credit would seem unnecessary While the obligations of the Federal Government will undoubtedly continue to rank as the most highly rated investment, persons with historical perspective have been disturbed by the huge peace time debt expansion of the 1930's, when the national debt rose by a larger amount than during World War I In that war the interest-bearing debt rose from $1 to $26 billion, between 1930 and 1940 the total rose from $16 billion to $42 billion World War II created a monumental national debt of more than a quarter-trillion dollars The current burden of this debt has been relatively moderate for two chief reasons—an unusually low average rate of interest and an unprecedentedly high national income The latter was represented by a genuinely high level of physical production but also reflected a high price level growing out of the inflationary effect of war finance

A consequence of the latter has been that investors in Government obligations, whether directly or through life insurance and other financial institutions, have suffered the equivalent of a capital levy in the form of lost purchasing power Often this loss has been considerably more than all interest received even if the investor made no allowance for the income taxes that take back a large part of his interest income Generally an overexpansion of the Government debt that is held within the country does not lead to an actual open default but to inflation and a loss of purchasing power of the standard of payment

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[26] The refusal of the Federal Government to honor the gold clause in its debt contracts after changing the gold content of the dollar is regarded by many as a default However, without attempting to determine the reasonableness of this belief, two points should be noted first, full payments were continued in "lawful money", and second, prices had so declined at the time of the change in the gold standard that the purchasing power of this lawful money was greater than that of the dollar in use in the period during which most of the debt was created

Those who have hoped that Government planning might reduce the fluctuations of the business cycle have been disturbed by a postwar national policy almost exactly opposite to the course ordinarily charted for such planning It is argued that a desirable governmental policy would be to plan governmental spending to counterbalance cyclical tendencies During a boom period this policy would mean the curtailment of government spending and a surplus of tax revenues over expenses to permit debt contraction During bad times, the government would plan to expand public works and use its credit to the point of deficit financing in order to offset the contraction of the private durable goods industries Actually, the prosperous postwar years have witnessed a continuation of government deficit financing except for the fiscal years 1947 and 1948. (Deficits have been continuous since 1930 save for the two years mentioned ) Furthermore, business and housing construction have been stimulated by easy credit policies While easy credit was directed to making financing cheap for the Government debt, it has inevitably made credit easy for private borrowing as well

This last point leads us to note that in studying the national debt, account should be taken of contingent obligations that now exist on a scale never seen before Any complete picture of the debt must include these debt potentials as well as the direct debt already studied These obligations include (1) guaranteed obligations, which are discussed in the next section of this chapter, (2) contingent liabilities that could grow out of guarantees given by the Government, such as the guaranteed mortgage loans of the Federal Housing Administration and the Veterans' Administration, discussed in the preceding chapter, (3) the financial responsibility to stand behind the various social security programs, such as for old age and unemployment, which have thus far brought in more tax revenue than their burden, but which might outstrip the planned taxes in depression, and (4) the moral responsibility to stand behind various agencies, such as the Federal Deposit Insurance Corporation, the Federal Savings and Loan Insurance Corporation, and the farm credit agencies, which are expected to be self-supporting but might under adverse conditions suffer losses in excess of their capital and reserves Limitations of space prevent a further discussion of these newly important factors Some of the items are in any case conjectural so that little more than a mention of their nature and importance is possible

## Government Guaranteed Obligations

**Emergency agencies of the depression** During the difficult 1930's, a number of emergency institutions arose that obtained funds from either the Federal treasury or by the sale of obligations to the investing public When securities of the institution were sold and assets and operations did not give a high credit standing, the Federal Government added its guaranty The resulting bonds or notes were only a contingent liability and so not included in the national debt figures as a rule Wherever good assets were present to support these guaranteed obligations and ultimately to pay them off, the debt added nothing to the burden on the taxpayer

Leading examples of such obligations were the bonds of the Home Owners' Loan Corporation, the Federal Farm Mortgage Corporation, the Reconstruction Finance Corporation, and the Commodity Credit Corporation The first two, formed in 1933, extended the Government's credit to small home and farm owners who had defaulted during the depression This credit rescued a legion of small-property owners who were the victims of the drastic price level decline and wide unemployment—circumstances beyond their control Both the Home Owners' Loan Corporation and Federal Farm Mortgage Corporation made an excellent record as the result of the war-created shortage of homes and the war-stimulated farm prices

The Reconstruction Finance Corporation was created in 1932 as an emergency institution to aid financial and other institutions whose needs could not be met through normal private channels It made loans, where adequate security appeared present, to banks, railroads, building and loan associations, and other private institutions, and to municipalities It also allocated funds, usually through the purchase of capital stock, to other government agencies and corporations, including the Home Owners' Loan Corporation, the Land Bank Commissioner, Federal Housing Administration, and the Federal National Mortgage Association Here, too, the record of repayments on depression-made loans was excellent The subsequent continuance of its lending activities has raised questions both as to the soundness of some of its loans and the desirability of its continued operation in ordinary times In such a period, a government lending agency that accepts only loans refused by private lending institutions is likely to acquire at least a certain proportion of doubtful risks

The Commodity Credit Corporation was created in 1933 to make loans to producers desirous of carrying agricultural commodities during the marketing period Actually, the Corporation goes far beyond ordinary lending and is an instrument used chiefly for supporting the prices of farm products This is done by permitting the borrowers to abandon the pledged products, such as cotton, corn, tobacco, wheat, butter, potatoes, and peanuts, without incurring any personal liability to the Corporation for any deficiency in the value of the security as compared with the loan The Treasury from time to time meets any deficits

As the 1930's passed, the Treasury found it economical to raise the funds for the conduct of these agencies by the direct issuance of Government securities, and then to lend the necessary amounts to the agencies from the Treasury Currently, only nominal amounts of government guaranteed obligations are outstanding in the form of obligations of the Federal Housing Administration and the Commodity Credit Corporation The total amount of mortgages insured by the F H A since its beginning in 1934 has been $18 7 billion, of which $10 2 billion were outstanding on January 31, 1950 In 1949 about 37 per cent of the permanent private nonfarm dwelling units started carried this form of mortgage insurance Since 1944, the Veterans Administration (VA), created under the Servicemen's Readjustment Act of that year, has insured loans aggregating $9 3 billion, upon which its guarantee amounted to about $4 5 billion

## Housing Authority Bonds

Technically, the issues of the various local Housing Authorities should be classified as municipal revenue obligations Because they depend primarily for their investment quality upon an indirect form of Federal Government guaranty rather than the rental income from housing, a realistic treatment is to list them here

These issues offered through the Public Housing Administration, a federal agency, are 40-year bonds to be repaid through serial maturities over their life The authorized total over a six-year period is presently $7 billion The housing is not for profit but to supply low-cost housing to families with low income These multiple unit dwellings are slum clearance projects To the extent that any project fails to earn its debt service in full, the Federal Government is pledged to pay an annual contribution or subsidy up to the amount of the debt service Such payments are not to go to the local housing authority but to the bond-paying agent for the sole purpose of insuring full payment of interest and serial maturities as they fall due Consequently, the bonds are not a direct or guaranteed obligation of the usual type, for the funds must be appropriated as needed each year by Congress and a delay in such action is possible.

Like municipal and unlike most Federal obligations, these bonds will be fully exempt from all Federal income taxes. They will compete in the bond market with other state and municipal obligations. Their importance may be realized from the fact that they may come to constitute a fourth of this "tax-exempt" market.

### Government Instrumentalities. Without Guarantee

#### FEDERAL FARM LOAN BONDS

**Agricultural credit need.** Prior to 1916 the need for more adequate rural credits was widely felt. Farm mortgage loans bore interest rates that ran to 8 per cent. They were often for short terms so that commissions and bonuses were burdensome and not infrequently brought the effective rate of interest to more than 10 per cent. With the inauguration of the Federal Reserve System in 1914 to improve the commercial banking structure of the country, there was pressure to do something for the farmer.

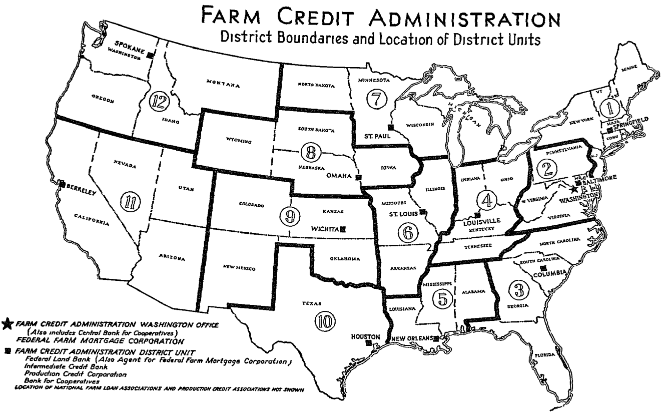
It is significant that the Federal Reserve Act, as originally passed, made a gesture of assistance by permitting the new Federal Reserve banks to rediscount for member banks their agricultural paper with a maturity of six months as against a limit of 90 days' maturity for commercial paper rediscounts. Later, the maturity limit on farm paper was increased to 9 months. But the difficulty was more fundamental. Farmers were limited in the commercial banking field to small local unit banks, usually of very limited resources. No branch bank system such as existed in Canada was permitted that could convey funds from the well-provided urban centers to such places as might be most lacking in short-term loans. Even if a local bank was willing to and could borrow from the larger cities, it was limited by its own resources. Since the local bank had to concentrate its risks in a single area, it was obliged to be ultraconservative or to undertake risks that were fatal for a situation lacking diversification. That many pursued the latter course is evidenced by the unusual mortality of rural banks throughout our history, a record that probably can be duplicated in no other country.

In view of these facts, it is not strange that the agricultural interests of the country should urge the passage of legislation to facilitate such financing as they require; and, when one considers the basic role played by our agricultural industry, it is perfectly logical that adequate funds should be provided, under satisfactory banking arrangements, for purposes of legitimate financing These ends were sought in the passage of the Federal Farm Loan Act in July, 1916

**Types of banks created by Federal Farm Loan Act** Two types of banks were created under this system first, Federal land banks, and second, joint stock land banks, both of which were designed to provide funds necessary for long-term financing—that is, loans on mortgages The latter were privately owned, and, as a result of troubles in the depressed 1930's, they were liquidated Unlike the Federal land banks, described more fully below, they received no governmental aid to preserve them through that period of stress In 1923, by amendment of the original act, Federal intermediate credit banks were established to provide funds for the financing of operations that require, as a maximum, three years for their consummation In other words, the Federal intermediate credit banks were designed to meet such requirements as were not or could not be met by the commercial banks and that did not necessitate a long-term mortgage

**Establishment and organization of Federal farm land banks** Under the terms of the original act, continental United States was divided into twelve districts to be known as the Federal land bank districts, and in each district a Federal land bank was established The ultimate territories set up are shown in Figure 18 These districts have now become the basis for the organization and control of all the various farm credit agencies, as well as of the Federal farm land banks

Under the present amended law, all the various Federal agricultural credit agencies are coordinated and governed by the same board of directors that controls the Federal land banks Each bank has seven directors, three of whom are known as local directors and are chosen in the following way one is chosen by and is representative of the national farm loan associations, one is chosen by the productive credit associations, and one by the bank for cooperatives (Such of these organizations as have investment interest are discussed below ) Three more directors, known as district directors, are appointed by the governor of the Farm Credit Administration, two of whom are to represent the public interest and one, who must be a borrower, to represent the national farm loan associations and borrowers through agencies. The seventh director, known as the director-at-large, is to be appointed by the governor of the Farm Credit Administration and is subject to removal by



Source *Annual Report of Farm Credit Administration 1941*, p vi

Figure 18 Farm Credit Administration Districts

the latter The governor himself is appointed by the President of the United States

**The national farm loan associations** Before starting business, every Federal land bank was required to have a subscribed capital of not less than $750,000, to be divided into shares with a par value of $5 each, which may be subscribed to and held by a local farm loan association, a direct borrower from a land bank, or by the United States Stock of the Federal farm land banks owned by the United States Government is not entitled to dividends, although all other stock is The act further provides for the formation of corporations to be known as national farm loan associations, which may subscribe to and hold stock in Federal farm loan banks The purpose of forming such associations was to create media through which loans might be made by the Federal land banks Each such association is a local corporation, and must be made up of ten or more individuals, each of whom is a borrower from the banks Each borrower is required to subscribe to an amount of stock in the association equal to 5 per cent of his loan The proceeds of these subscriptions are then invested by the associations in an equal amount of Federal land bank stock, which is held by the issuing bank as additional security for the loan and is eventually retired upon its payment

**Functions of farm loan associations.** These farm loan associations are required to indorse all loans that are made through them and are also responsible for supervising collection of interest and amortization payments, for reporting delinquencies in the payment of taxes, and for applying the proceeds of all loans In view of the fact that each farmer borrower has a stock investment that may be used to meet the obligations of his association, there is a mutuality of interest among members to see that all loans taken are good and that proper safeguards are provided for keeping up payments and taxes This local responsibility is designed to relieve the bank from many of the details that it would otherwise be required to meet Practically all loans in the continental United States are now closed through these local associations, which endorse the notes and become liable for the loans of its members [27]

Over 98 per cent of the original capital of $750,000 for each bank, or $9,000,000 for the entire system, was originally subscribed to by the Federal Government This stock was gradually replaced by stock held by the local loan associations In the succeeding years, all but a nominal amount of the Government's stock was retired In 1932, however, the financial position of the banks was such that the Government deemed it wise to bolster the situation by subscribing for $125,000,000 of stock Between June 19, 1934 and May 14, 1937, $189 million was appropriated by Congress to supply additional paid-in surplus for the banks All stock and paid-in surplus have since been repaid to the Government

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[27] No such endorsements are made in Puerto Rico, where loans are made directly to borrowers The present relative unimportance of the direct loan is indicated by the ownership on December 31, 1948 of $55,135,991 of land bank stock by the associations and only $781,775 by direct borrowers On that date there were 1,241 associations

**Character of mortgage loans** The purpose of the system is to provide mortgage loans on convenient terms to bona fide farmers who are actually engaged in the cultivation of the mortgaged farm All loans must be first mortgages, may run from 5 to 40 years with full repayment of principal during the term of the loan, and are not to exceed $50,000 Generous prepayment privileges are granted the borrower Originally the loan was limited to not more than 50 per cent of the appraised value of the land plus 20 per cent of the appraised value of the permanent insured improvements This rule emphasized the importance of the land and its productive value to the safety of the loan The present rule limits the loan to 65 per cent of the appraised normal value of the mortgaged farm Certain other requirements are made with respect to the ability of the farm to earn enough to cover expenses and the mortgage service for the life of the loan Interest on the loan was limited to 6 per cent or one per cent in excess of the rate on the bank's last bond issue, whichever was less Recently, the actual rate has been 4 per cent in most cases with 4½ per cent in some districts The loan first has to pass the inspection of the local farm loan association and then that of the Federal appraiser and land bank officers

**Federal land bank bonds** In order to provide the considerable sums required for lending, the Federal land banks are permitted to sell so-called debenture bonds, which are protected by collateral All bonds are secured by an equal amount of first mortgages on farm property, such as those just described, or by United States Government securities or cash As mortgage loans are reduced by amortization, additional mortgages or Government securities must be deposited in the amount of such reduction No bank is permitted to issue or obligate itself for outstanding bonds in excess of twenty times its paid-up capital and surplus, or to receive from any national farm loan association additional mortgages when the principal remaining unpaid upon mortgages already received from such association shall exceed twenty times the amount of capital stock owned by such association The bonds now outstanding are all consolidated farm loan bonds, that is, they are the joint and several liability of all the twelve banks

Because the bonds issued by the Federal land banks are considered as "instrumentalities of the government of the United States," they are exempt as to principal and interest from all state and local taxation, but, like United States obligations, are subject to all Federal taxes Despite the lack of guaranty by the Government, investors are strongly disposed to believe that in the event of financial difficulties, these banks would receive Government assistance, as indeed they did during the depression of the early 1930's[28]

After the sharp reduction in agricultural income during 1920 and 1921, and the settlement of the question of constitutionality of the enabling act, the Federal land banks expanded their operations until in the late 1920's they had $1 25 billion of outstanding loans Another accession of business came after the crisis of 1933, so that in 1935 total loans amounted to over $2 billion Repayments and liquidation in excess of new loans have caused a declining trend in the total loan figure since that date, until on June 30, 1949, they totalled $879 million, against which bonds amounting to $646 million were outstanding From their organization until the end of 1948, these banks had closed 1,086,555 loans for an aggregate amount of $3,959 million

**Summary** Agriculture is a basic industry If mortgage loans on farm properties are based on conservative appraisals and suitable repayment terms are made, bonds issued against such mortgages should be considered of investment quality In view of the political character of the organization, it was at first feared that loans would be made on the basis of overextended appraisals The banks, however, with the aid of the Government, weathered a prolonged depression in agriculture Their position appears sound It seems probable, however, that the period allowed the farmers for the repayment of loans (40 years) is longer than conservative finance would dictate The loan repayment under even a 30-year amortization plan gives only a small reduction of principal in the early years If, in ordinary years, a borrowing farmer cannot pay two times the very low interest rate called for, it is doubtful that the loan is sound (The interest rate is less than one half that paid by many farmers before the land bank system was inaugurated) Too lenient terms may not only weaken the position of the lending institution by leaving little margin with which to meet emergency conditions, but it may also, in more ordinary times, encourage speculation in farm lands and bolster speculative values

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[28] Hon Charles E Hughes, acting as private counsel for a group of bankers at the time they were investigating an early issue of Federal land bank bonds, said in part

"Taking into consideration the facts which have been stated with respect to the organization and control of the Federal land banks, I am of the opinion that the Farm loan bonds which are about to be issued by the banks under the authority and direction of the Federal Farm Loan Board by virtue of the power conferred by Congress, and which have been expressly declared by Congress to be instrumentalities of the Federal Government, must be regarded as obligations having the support of the good faith and credit of the United States And while such obligations, because of the nature of sovereignty, confer no right of action against the United States without its consent, being only binding on the 'conscience of the sovereign,' and hence in this aspect invite reliance on the sense of justice of Congress, still the actual relation of the issue of these bonds affords additional grounds for sustaining their validity "

Other forms of aid are reported in the *Second Annual Report of the Farm Credit Administration,* 1934

However, the very evident Government support accorded these institutions and the farmer borrowers in 1933 and 1934 have created a decidedly favorable rating for the Federal land bank bonds Rising prices also increase farm property values The activities of the Agricultural Adjustment Administration have favorably affected farm income over the short term, although they have been regarded as an unsettling factor over the long term because of the tendency of artificially supported prices to destroy foreign markets and stimulate production

For the investor, the Federal land banks are an interesting example of the "mortgage bank" patterned after earlier European models and found in many countries They pool mortgages, typically an unliquid investment, into an investment fund serving as security for bond issues with a relatively small supporting stockholders' equity The bonds have the advantage of marketability and diversified risks In the urban mortgage field the equivalent result of liquifying mortgage investments is obtained by channeling them into such financial institutions as savings and commercial banks and savings and loan associations The obligations of these institutions provide the individual investor with a liquid, diversified, management-free investment

## INTERMEDIATE CREDIT BANKS

**Functions and powers** The Federal intermediate credit banks, created under the authority of the Agricultural Credits Act of 1923, are intended to serve the short-term and intermediate credit needs of the farmer, as the land banks do his long-term credit needs They are not authorized, however, to make any direct loans to farmers[29]

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[29] For further discussion, see Baird, Frieda and Benner, C L, *Ten Years of Federal Intermediate Credits* (Washington, D C Brookings Institution, 1933)

There are twelve of these institutions located in the same cities and under the same control as the twelve Federal land banks Their lending operations consist of

1 Discounting farmers' and stockmen's promissory notes when indorsed (a) by private credit agencies, such as national or state banks, agricultural credit corporations, and livestock loan companies, or (b) by cooperative organizations, such as production credit associations, and regional agricultural credit corporations

2 Lending to cooperative associations of agricultural producers

3 Accepting drafts, suitably secured by warehouse receipts or other documents, giving title to agricultural staples, when drawn by producers' cooperative associations

4 Lending to cooperative purchasing associations formed to buy farm supplies for members

There are various restrictions designed to insure sound loans Maturities accepted are ordinarily from three months to one year and cannot exceed three years

**Financing through debentures: scope of operations** These banks are authorized to issue debentures up to ten times their paid-in capital and surplus Such issues cannot have a maturity of more than five years and must be secured by at least an equal face amount of cash, notes, or other obligations discounted While these bonds are not a direct obligation of the government, they are regarded as instrumentalities thereof and are exempt from all state and local taxes, but fully subject to Federal taxes in the same manner as Federal obligations All the capital stock of the intermediate credit banks is held by the government As in the Federal Land Bank System, mutual liability exists on the part of all the banks of the system The balance sheet on page 550 shows the position of these banks

The investment standing of the consolidated collateral trust debentures of the intermediate credit banks is very high, but their usually short maturities have made them more attractive to the commercial bank than to the ordinary investor Their prime quality is explained by (1) the short maturity of and the character of the security for the loans made by the intermediate credit banks are such as to minimize losses, (2) the net worth, in the form of capital stock and surplus, is substantial in relation to the debenture liability, (3) the stock is owned by the Federal Government, and (4) the banks are jointly and severally liable for all obligations

COMBINED STATEMENTS OF THE TWELVE INTERMEDIATE CREDIT BANKS AS OF DECEMBER 31, 1949*

(Thousands of Dollars)

| | |
|---|---|
| *Assets* | |
| Loans and discounts | 643,602 |
| Cash on hand and in banks | 13,825 |
| United States Government obligations, direct and fully guaranteed | 45,054 |
| Other assets | 5,454 |
| Total | 707,935 |
| *Liabilities* | |
| Consolidated debentures (unmatured) | 598,440 |
| Notes payable | 7,100 |
| Other liabilities | 5,806 |
| Capital stock paid in | 60,000 |
| Surplus paid in | 500 |
| Earned surplus | 25,269 |
| Reserved for contingencies | 10,820 |
| Total | 707,935 |

* *Annual Report of the Farm Credit Administration*, 1948–49, p 126

## FEDERAL HOME LOAN BANKS

In 1932, twelve Federal Home Loan banks were created to serve home mortgage lending institutions much as the Federal Reserve banks serve commercial banks They make short- and long-term (amortized over a period of not more than ten years) loans to member institutions, which may be savings and loan associations, savings banks, and life insurance companies Most of the membership has consisted of the first class of institution The capital stock of these banks is owned by the Government and the members, the latter subscribing an amount equal to one per cent of their mortgage holdings When the lending operations of the banks require more funds than are available from the stockholders' investment, Consolidated Debentures may be sold These may be issued up to an amount equal to five times the paid-in capital but not in excess of the secured notes or obligations of member institutions held by the banks

## FEDERAL NATIONAL MORTGAGE ASSOCIATION

The Federal National Mortgage Association was incorporated in 1938 under the provisions of Title III of the National Housing Act. Capital of $10 million and paid-in surplus of $1 million were provided by the Reconstruction Finance Corporation Its main purpose was to make, purchase, and deal in first mortgages on homes insured either by the Federal Housing Administration or the Veterans' Administration The Housing Act of 1950 raised the limit on the Association's purchases to $2,750 million It has been chiefly active in buying such mortgages made by local mortgage companies or other institutions as lacked funds of their own to carry them and were unable to find a ready market elsewhere To finance such holdings as it could not resell, it has issued its own notes It has the power to issue its own credit obligations up to twenty times its capital and paid-in surplus

In conclusion, two points should be kept in mind with respect to these "instrumentalities of the Government" In the first place, the obligation of the Government, whether a legal one as a result of a guaranty, or merely a moral one, is not ordinarily reported as a part of the outstanding Federal debt However, one who is analyzing the latter should always keep this "unseen debt" in mind In the second place, many of these organizations have funds invested in them by the Government, and to the extent that these amounts are repaid in the future, they will permit Federal debt reduction. In this respect assets exist that are sometimes overlooked

# 19

# Civil Obligations—State Bonds

**State bonds differentiated from municipal bonds.** The term "municipal bond," in contrast with "government bond," is sometimes loosely applied to the obligations of states, as well as to counties, municipalities, and other political subdivisions. However, fundamental differences exist between the various types of securities thus classed together. The most important difference is between state bonds and the obligations of political subdivisions of states. Under the Constitution of the United States, each individual state is a sovereign power in itself as to all powers not specifically delegated therein to the Federal Government nor prohibited by the Constitution to the states. Thus, the legal status of state debts is much the same as that of United States debts: such debts rest on the good faith and willingness of the states to pay their obligations when due. Legal compulsion cannot be brought to bear by individuals against a state.[1] It is true that one state may sue another state, but this is of little comfort to an individual who holds the bonds of a defaulting state.[2]

With a political subdivision of a state, however, the situation is different: if the subdivision fails to pay matured obligations, suit may be brought against it. Because of this important difference between the state and its subdivision, the better practice is to classify their obligations separately and confine the term "municipals" to city, county, village, town, and tax district bonds

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[1] There are eleven states, California, Indiana, Ohio, Pennsylvania, Nebraska, Nevada, North Dakota, South Dakota, Washington, Wisconsin, and Wyoming, that do permit their citizens to institute suits against them.

[2] In certain instances, holders of defaulted state bonds have donated them to other states, which subsequently brought suit against the defaulting state. Thus a holder of North Carolina bonds donated $10,000 of them to South Dakota, which carried the case to the United States Supreme Court and received $27,410.

It is interesting to recall briefly the history leading up to the present situation in respect to state bonds At the time the Constitution was under discussion, there was a strong sentiment in favor of state rights The idea of a strong federal government was not then generally accepted Accordingly, the individual states insisted on retaining a large measure of autonomy in their fiscal relations Among the specific restrictions placed upon them were the following they were not allowed to coin money, to issue bills of credit, or to declare anything but gold and silver legal tender, they were also prohibited from levying import, export, or tonnage duties Furthermore, no state was permitted to pass laws that impaired obligations or contracts On the other hand, under the Tenth Amendment to the Constitution, such powers as were not specifically "delegated to the United States by the Constitution, nor prohibited by it to the States," were "reserved to the States respectively, or to the people " The creation of debt is one of the powers neither delegated nor prohibited, and is clearly implied in the Tenth Amendment

At the time the Constitution was adopted, the right of an individual to sue an individual state apparently was not considered However, in 1793, a suit was brought against the state of Georgia by a resident of North Carolina Immediately the question as to whether an individual might sue a state was raised [8] This case was tried before the Supreme Court and decided in the affirmative The decision was decidedly unpopular, in view of the growing Republican sentiment at this time, and resulted in the adoption, four years later, of the Eleventh Amendment, which read as follows

> The judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by citizens of another state, or by citizens or subjects of any foreign state

Thus the present situation is explained in so far as it interests the investor It is true that there was probably no thought of debt repudiation when ratification of the Eleventh Amendment was sought, nor for some years after Yet, when matters came to such a pass that some of our states found it expedient to default on their bonds, a convenient refuge from legal action in Federal courts to enforce payment was found in the Eleventh Amendment

In contrast with the sovereign position that the states occupy, counties, cities, towns, and other incorporated districts, such as drainage, school, and levee districts, are creatures of the state in which they are located That is to say, they are corporations created by the state and therefore continue their legal existence on the sufferance of the state In fact, the charters under which municipalities exist may be amended or even repealed by the state Accordingly, counties, towns, cities, and special districts created within a state occupy a position that is decidedly subordinate to the state from a legal standpoint

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[8] Chisholm v Georgia, 2 Dall (U S) 419

It is the subordinate legal position occupied by municipalities, as we shall designate these divisions, that makes it legally possible for a private individual to bring suit against them without their consent The legal action customarily brought, in the event of a municipal default, consists of application to the proper court for a writ of mandamus ordering the municipal authorities to levy sufficient taxes to pay the principal and the interest of the bonds in default In Maine, New Hampshire, Vermont, Massachusetts, and Connecticut, bondholders have the right to seize the property of any or of all the inhabitants in execution of the judgment of a court ordering payment of defaulted bonds [4]

In other states the general remedy in cases of default consists of mandamus proceedings requiring the proper officers to levy a tax sufficient to pay the judgment, although there are some states in which the *public* property of the defaulting corporation may be seized In New York State, municipal property not in public use may be so taken In Indiana any public property of counties may be taken, and probably a similar remedy exists in the case of cities and towns In Nebraska officers who fail to fulfill their duty of collecting the necessary taxes become personally liable [5]

It must not be assumed, however, that mandamus proceedings are always effective In some states there is a definite limit to the amount of taxes that may be levied in any year Thus, in Alabama, the state constitution of 1901 limits state taxation to 65 of one per cent of assessed valuation, while county taxes are limited to one half of one per cent, provided one quarter of one per cent additional may be levied to pay debts existing December 6, 1875, and provided that one quarter of one per cent additional may be levied to pay debts incurred for the construction or maintenance of necessary public buildings, bridges, or roads [6] In November, 1916, an amendment was passed authorizing additional taxes, not exceeding three tenths of one per cent, for school purposes in the several counties, when properly approved by electors The same rights were accorded special school districts in the state Cities and towns are authorized to levy taxes up to one half of one per cent, provided one per cent additional may be levied exclusively for paying debts created prior to December 6, 1875 (Certain cities are permitted to levy certain limited additional taxes for special purposes, particularly for schools These additional taxes range from two tenths of one per cent to one per cent ) By special amendment, certain municipalities are permitted to levy further taxes of one half of one per cent for debt payment and one half of one per cent for any legal purpose, provided the total tax of such municipalities in no year exceeds a total of 1½ per cent [7]

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[4] See Raymond, W L, *State and Municipal Bonds* (Boston Financial Publishing Co, 1932), p 3

[5] *Ibid*, p 5

[6] State Constitution, 1901, Sections 214, 215

The effect of this limitation is of special importance to the purchaser of municipal bonds It means that, in case of default, mandamus proceedings cannot be brought to compel the tax officials to levy taxes in excess of the legal limit. If authorized taxes are insufficient to meet debt service and necessary expenditures of the municipality, then the default is without remedy In justice to states that have a legal or a constitutional limit on the rate of tax that they or their municipalities may levy, it should be said that strict limits are usually found in respect to the amount of debt they may incur A limit upon debt rather than upon tax rates is regarded as the more appropriate protection for property owners and bondholders Many investors avoid any obligations of states or municipalities that limit their tax rate, unless a specific exception is made in favor of that part of the rate that is used to care for the debt service

**State credit in the United States.** At the present time, it is customary to regard state and municipal bonds as second only to Federal obligations in the matter of safety Yet, during our relatively short national history, there have been flagrant examples of default and repudiation in respect to state debts, as well as some municipal defaults No study of state bonds would be complete without at least passing consideration to these defaults, as well as to the underlying causes from which they resulted A study of the causes is just as important as a study of the facts, for it is only by eliminating the causes that we may hope to prevent history from repeating itself in these matters

**Period from 1789 to 1830.** At the time the Constitution was adopted, most state debts had been assumed by the United States For the first forty-five years of our national existence, a conservative financial policy was pursued not only by our Federal Government, but by state governments as well The early Federal debt had been entirely paid off in 1835 In 1825 the aggregate debt of the states was but $13 million, or $5 million below the amount of state debt at the time of national assumption in 1790 By 1830, however, the total state debt had been increased to $26 million, and in 1835 to $46 million

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[7] State Constitution, 1901, Section 216, and amendments In about one half of the states, taxes are now limited in one way or another

**Period from 1830 to 1840: defaults following panic of 1837.** During the very period in which our Federal Government was reducing its debt, state governments were pursuing the opposite course The first part of the decade from 1830 to 1840 was marked by rapid expansion in all branches of economic activity, and the various states, in an effort to attract trade and industry, vied with one another in the development of roads, canals, railroads, and other public improvements At a time when antagonism toward further extension of Federal undertakings within states was evident, there was a strong popular sentiment favoring state aid in the completion of public improvements within state borders A period of feverish building and borrowing was the result The aggregate state debt, which, in 1835, was but $46 million, reached the then enormous total of $175 million during the next three years The panic of 1837 and the ensuing depression, which lasted well into the next decade, were accompanied by widespread default and repudiation in state debts While it is true that the West and the South were the worst offenders, it is by no means true that defaults were confined to those sections

The New England States had an exceptionally splendid record Maine, Vermont, New Hampshire, Connecticut, and Rhode Island did not follow the trend of the times but kept themselves comparatively free from debt Massachusetts was never in serious financial straits after the adoption of the Constitution, even though its debt grew much more rapidly than did that of neighboring states New York, Pennsylvania, and Maryland, on the other hand, incurred very heavy debts during this period New York, in its effort to finance the Erie Canal and other lateral canals, piled up a total debt aggregating $18,262,406 and, by 1842, was on the verge of bankruptcy[8] It must be said to its credit, however, that at no time did it default, in payment either of principal or of interest Pennsylvania and Maryland, in contrast, had less fortunate experiences The total debt of Pennsylvania reached $37,319,395 in 1842, a large part of which had been incurred in aiding railroad and canal companies When these undertakings proved unprofitable during and after the panic of 1837, the state was temporarily unable to pay its interest in cash Nevertheless, cash payments were resumed in 1845, and the "relief notes" used to meet interest payments during the crisis were eventually redeemed Since that time there has been no further difficulty in payment either of principal or of interest by this state The situation in Maryland was similar to that in Pennsylvania During the early 30's, Maryland subscribed to the stocks of various railroads, including the Baltimore & Ohio, and lent money to and purchased stock of the Chesapeake & Ohio Canal At the time extensive borrowing was undertaken to support such public improvements there was no system of taxation The inevitable result, at the time of the 1837 panic, was inability to meet interest payments The state took active measures to correct this situation, however, and, on January 1, 1848, it was able to resume interest payments in full[9]

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[8] *Tenth Census*, Vol VII, pp 526, 537

Other states became involved in the wave of speculative enthusiasm that characterized this period, and suffered similar consequences In 1840 Indiana suspended interest payments, but in 1847 settled all arrearages Illinois, in 1841, experienced similar troubles, but eventually cleared its record Michigan became involved in an overoptimistic program of state aid, and defaulted in 1841 Settlement with creditors was less generous here than in the other states so far mentioned, in that Michigan agreed to acknowledge only that portion of its debt for which it had received full payment[10] Bonds that had been only partially paid for had worked their way into the hands of innocent purchasers who paid in full, yet these purchasers failed to receive the entire face value of their bonds The record of Michigan, accordingly, is one of reasonably good faith in difficulties, but is not so commendable as that of the other defaulting states, which eventually made payment in full The record of Florida and Mississippi during this period was far less satisfactory than that of other defaulting states, in that both deliberately repudiated their entire debts The territory of Florida, in 1840, refused to pay interest on an issue of bonds of the Bank of Pensacola that had been indorsed by the territory Other bonds had been issued to supply the capital of the Union Bank of Florida, as well as of the Southern Life Insurance & Trust Company These bonds were all repudiated by the territory, and, when the constitution of the state was adopted, prior to the admission of Florida to the Union, the legislature was denied the power of imposing any tax for the purpose of paying the bonds issued by the territory[11] Arkansas was in default in 1841, and, since no definite attempt was made to clear up the record, it remains in default on some of its bonds to this day.

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[9] Raymond, W L, *State and Municipal Bonds* (Boston Financial Publishing Co, 1932), pp 122–123 Moreover, "when the state found itself unable to pay interest, it received coupons in payment of taxes From 1844, it made partial payments on interest current and accrued Later it funded arrears of interest with 6 per cent bonds"

[10] *Ibid*, p 129

The alternate waves of enthusiasm and depression that swept the country during the decade from 1830 to 1840 were thus responsible for the first era of default in state debts The underlying causes for this unfortunate situation may be summarized under two headings overabundant optimism and too liberal state aid in private undertakings Of course, there were auxiliary causes, such as the political roguery of the times, lack of financial acumen, poorly organized systems of taxation, and the like, but these were secondary The lesson was partially taught at this time that state legislatures should restrict their activities to governmental functions and should not embark on commercial ventures either independently or as partners We say "partially taught" because, while the dangers inherent in state ownership of commercial enterprises were made clear, subsequent generations seem to require a repetition of the experience to drive the lesson home

**Second era of default, from 1848 to 1860.** The second period of defaults covered the years from 1848 to 1860 During these years there were some difficulties of a less serious nature than those that occurred during the previous period The most serious case of repudiation at this time occurred in Minnesota and resulted largely from the same circumstances that caused the widespread defaults of the 1830's—state aid granted to railroads in the form of bond issues sold by the state In 1860 an amendment to the state constitution provided that no law that called for payment of the principal or the interest of $2,275,000 of state bonds so issued should take effect until such law was ratified by popular vote There developed at this time a strong sentiment in favor of repudiation, and it was not until the supreme court of the state held the amendment unconstitutional that this debt was compromised Shortly thereafter an act was passed that provided for settlement of the old debt on the basis of fifty cents on the dollar in cash or 5 per cent bonds for old 7 per cent bonds and interest Substantially all the old bonds were retired in this way

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[11] Constitution, State of Florida, effective March 3, 1845, Article VIII, Section 2

Texas defaulted on its bonds prior to its admission as a state The entire debt at that time was estimated at $9,647,253, to which a value of $4,807,764 was assigned The United States agreed to pay Texas $10,000,000 in 5 per cent bonds for certain territory ceded to Mexico, although only $5,000,000 was to be released until creditors of Texas had released the United States from all claims on account of customs The second $5,000,000 was never issued, and subsequently, the United States appropriated $7,750,000 in cash to satisfy creditors of Texas In 1856 the state was declared to be out of debt [12]

California was the third state to default during this period, the default occurring in the year 1854 Subsequently, the supreme court of the state declared void all debt in excess of the $300,000 limit In 1857, however, the illegal issues were called in, and adjustment bonds were issued in payment therefor

This second period of default was not especially important. During this time there was no case of out-and-out repudiation, and, in two of the three cases cited, the causes for default antedate entrance of the defaulting states to the Union By far the most important era in state repudiation was the period from 1870 to 1884 In our discussion of debt repudiation we may neglect the fact that all obligations incurred by the seceding states in prosecution of the Civil War were never paid, for all such debts were declared illegal and void [13]

**Third era of default, from 1870 to 1884** From our standpoint, the most significant event of the period 1870 to 1884 was the actual repudiation of debt by Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Louisiana, Arkansas, and Tennessee It is unnecessary to go into an exhaustive account of each specific case, for such a detailed discussion would serve no useful purpose here Defaults were frequent throughout this entire period, and, while a small portion of the debts created by these states was subsequently compromised, by far the greater part was repudiated under the convenient refuge of illegality or invalidity For a majority of these states, the aggregate amount of debt with accumulated interest to 1920 was estimated by the Council of the Corporation of Foreign Bondholders (London) as follows [14]

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[12] Raymond, W L, *State and Municipal Bonds* (Boston Financial Publishing Co, 1932), p 178

[13] The Fourteenth Amendment, Section 14 of the Constitution of the United States, reads "But neither the United States, nor any state shall assume or pay any debt or obligation incurred in aid of insurrection or rebellion against the United States, or any claim for the loss or emancipation of any slave, but all such debts, obligations, and claims shall be held illegal and void"

[14] *48th Annual Report,* Council of the Corporation of Foreign Bondholders, 1921

| *State and Purpose* | *Approximate Principal Outstanding* | *Interest* |
|---|---|---|
| Alabama (guaranties to railways) | Unknown | Interest in arrears from about 40 years to about 70 years Estimated arrears of interest figured at an average of 6 per cent for 50 years |
| Arkansas (principally railway guaranties) | $ 8,700,000 | |
| Florida (banks and railways) | 7,000,000 | |
| Georgia (principally railway guaranties) | 12,700,000 | |
| Louisiana (railway guaranties, etc ) | 6,000,000 | |
| Mississippi (banks) | 7,000,000 | |
| North Carolina (railways) | 12,600,000 | |
| South Carolina | 6,000,000 | |
| Total | $ 60,000,000 | |
| Estimated Arrears of Interest | 180,000,000 | |
| Grand Total | $240,000,000 | |

The essential causes leading to the unfortunate period of debt repudiation following the Civil War are not difficult to find In the first place there had been a substantial loss in wealth in the Southern States as a result of the war itself In 1860, for instance, the total assessed valuation of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Tennessee, and Missouri was $4,332,901,458, while in 1880 the assessed valuation of these same states, including West Virginia, was $2,232,790,584[15] This reduction may be partly accounted for by the emancipation of slaves, but there was a further real loss in values upon which taxes could be levied Another and perhaps more important cause for repudiation is found in the character of the governments in these states during the reconstruction period following the war These states were overrun by cheap and dishonest politicians who descended from the North and who, by means of the newly enfranchised Negro voters whom they controlled, had themselves elected to important state offices With a ruthlessness that outclasses any political scandal of the present century, these "carpet-baggers" engaged in all kinds of peculation and dishonesty In many cases a large part of the debts incurred in the name of the Southern States during this period was created by dishonest politicians who carried away the proceeds It is little wonder that the native population, outraged in other ways during this period, felt under no moral obligations to meet these debts after the carpetbagger was finally driven out Although the South may be absolved in part from the censure that it has received on account of the wholesale debt repudiation of this period, it is nevertheless true that some of the funds represented by the bonds disposed of were received by states and were used in their interests

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[15] *Tenth Census,* Vol VII, pp 4, 16.

It is also true that during this period frequent borrowings were undertaken for state aid of private undertakings Again, the same difficulties arose that caused the first period of defaults the optimistic predictions regarding the earning power of the sponsored projects failed to materialize, thus leaving the state saddled with a heavy debt to be met by taxation

**Virginia–West Virginia controversy** We shall not consider the history of the debt experiences of each state, but the West Virginia controversy is of sufficient interest to warrant some attention When the constitution of West Virginia was adopted in 1863, the state agreed to assume an equitable portion of the public debt of Virginia as of January 1, 1861 A long dispute arose as to what West Virginia's share actually was, the state of Virginia claiming that, since West Virginia acquired one third of the territory of the old state, it ought to assume one third of the debt, or $15,239,371 West Virginia, however, claimed that her share did not exceed $953,360 In 1911 the United States Supreme Court held West Virginia liable for a principal sum of $7,182,507, leaving the matter of interest to be adjusted After further controversy the Supreme Court appointed a special master to take additional testimony, and in 1915 the findings of the master were sustained to the effect that the state of West Virginia was liable for the sum of $12,393,929 50, with costs divided between the two states Subsequently, Virginia found it necessary to petition for execution of judgment against West Virginia, and after some delay the legislature of the latter state adopted resolutions providing for a settlement of this debt Not until 1919, however, did West Virginia bring the controversy to a close by delivering to the Chairman of the Debt Commission the sum of $12,366,500, the amount then due in settlement [10]

This brief survey of state debts leads to the inevitable conclusion that, when a state becomes indebted for an amount that is excessive in relation to property values the situation is dangerous The pinch of heavy taxation is too easily relieved by resort to technicalities in an effort to prove a burdensome debt illegal and void Nor is there any adequate remedy open to the unfortunate bondholder in such cases The best protection, therefore, is the development of a code of honor and ethics that will make such a situation as existed fifty years ago impossible, and also the restriction of debts to moderate sums in relation to wealth and income

**Customary restrictions regarding state debts.** The early experiences of our states in debt matters has at least taught the desirability of rigid constitutional restrictions on the amount of debt that may be created and the purposes for which borrowing may be undertaken Practically every state today has constitutional provisions regarding borrowing The more important restrictions customarily found may be summarized as follows

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[10] For a complete account, see Raymond, W L , *State and Municipal Bonds* (Boston Financial Publishing Co , 1932), pp 188 ff

1 Permission is generally given to borrow without limit for purposes of repelling invasion, suppressing insurrection, or defending the state in time of war

2 Permission is given to borrow up to a limited amount in anticipation of revenues in order to meet casual deficiencies in revenues

3 Permission is given to issue bonds or notes for the purpose of refunding existing debt

4 Borrowing is frequently allowed for certain special purposes definitely stated in the acts authorizing the loan, provided that arrangements are made at the same time for paying the interest and principal of the bonds Frequently authorization of the loan is required to be ratified by popular vote

5. On the other hand, lending state credit to private enterprises, or lending state credit to political subdivisions, is prohibited [17]

**Present status of state borrowing.** An era of conservatism in state financing followed the third period of default and repudiation, which may be said to have culminated by 1880 At the same time that our Federal Government was reducing its debt, state debts were gradually decreasing, the total net debt standing at only $211,210,000 in 1890 [18] From that time until World War I there was a moderate increase in state borrowings, but in no case was the amount of debt incurred alarming After World War I, the debt of the states showed a steady rise not only during the prosperous 1920's but also during the depressed 1930's Not until World War II, with its restrictions on construction of all sorts, did the total decline markedly Afterwards, it resumed its rise In interpreting the gross debt figures, however, four points are necessary (1) population growth, a factor that explains the per capita figures in the table, (2) the offsetting influences of sinking fund assets and a minor amount of debt serviced by municipalities, which items are subtracted to arrive at the net debt, (3) the effect of a rising price level during most of the period, which means a substantial part of the increase was nominal in terms of real burden, and (4) a growing national income both per capita and in terms of real purchasing power. As between, the bottom of the depression in 1932 and the highly prosperous 1948, the per cent of total state debt to the national income dropped from 6.9 to 1.7 per cent.[19]

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[17] The four states, New Hampshire, Vermont, Massachusetts, and Connecticut, have no constitutional restrictions in regard to the creation of debt

[18] *Statistical Abstract of the United States*, 1926, p 215

STATE INDEBTEDNESS FOR SELECTED YEARS*

| | GROSS DEBT | PER CAPITA DEBT | |
|---|---|---|---|
| | *(Millions of Dollars)* | *Gross* | *Net* |
| 1948 | 3,592 | $25.20 | $19.83 |
| 1945 | 2,525 | 19.18 | 14.36 |
| 1940 | 3,615 | 28.86 | 20.43 |
| 1930 | 2,444 | 20.03 | 15.03 |
| 1922 | 1,163 | 10.74 | 7.70 |
| 1919 | 694 | 6.60 | 4.44 |
| 1915 | 533 | 5.41 | 3.75 |

* Compiled from *Financial Statistics of States* and *Compendium of State Government Finances, 1948*

The total, or gross, debt includes not only the funded debt but also floating, current, and special assessment debt, and liability to trust funds. The net debt figure is the gross debt minus sinking fund assets and a minor amount of obligations serviced by local government units. In 1948, sinking fund assets were $718 million and other deductions $47 million, reducing the gross debt of $3,592 million to a net debt of $2,827 million.

The same expansion in the activities of the states is reflected in the following table of operating costs on a per capita basis. The table does not include figures for interest on debt and its amortization.

PER CAPITA COSTS OF OPERATING VARIOUS STATE ACTIVITIES*

| | *1948* | *1942* | *1937* | *1932* | *1922* |
|---|---|---|---|---|---|
| Total | $30.52 | $31.92 | $20.28 | $12.52 | $8.48 |
| General government | 1.80 | 1.30 | 1.18 | .98 | .66 |
| Public safety | 1.40 | 1.10 | .83 | .70 | .49 |
| Health | .74 | .44 | .29 | .21 | .20 |
| Conservation of natural resources | 1.71 | .98 | .61 | .58 | .39 |
| Highways | 3.44 | 8.46 | 3.40 | 2.46 | .98 |
| Charities, hospitals and corrections | 11.07 | 9.36 | 6.71 | 2.65 | 1.50 |
| Schools and libraries | 4.58 | 7.92 | 6.43 | 4.78 | 3.07 |
| Miscellaneous | 1.44 | 2.36 | .80 | .09 | 1.20 |
| Veterans Bonus Payments | 4.32 | — | — | — | — |

* Compiled from *Financial Statistics of States* and *Compendium of State Government Finances*

The table on page 564 shows the net long-term debt of all the states for 1937 and 1948 on both a total dollar and a per capita basis. Short-term or floating debt is ordinarily temporary and nominal,

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[19] Department of Commerce, *Summary of Governmental Debt in 1948* (December 1948) p. 2.

## COMPARISON OF NET LONG TERM STATE DEBTS 1948 AND 1937*

| | Total Net Debt (*Millions of Dollars*) | | Net Debt Per Capita | |
|---|---|---|---|---|
| *State* | *1948* | *1937* | *1948* | *1937* |
| Alabama | $ 46.6 | $ 72.6 | $16.44 | $25.14 |
| Arizona | 2.7 | 1.6 | 4.10 | 3.91 |
| Arkansas | 114.9 | 163.9 | 60.03 | 80.44 |
| California | 72.0 | 106.3 | 7.34 | 17.40 |
| Colorado | 15.6 | 30.0 | 13.63 | 28.12 |
| Connecticut | 71.0 | † | 35.96 | † |
| Delaware | 7.1 | 3.1 | 24.49 | 11.99 |
| Florida | 2.1 | — | 0.90 | — |
| Georgia | 3.7 | 23.4 | 1.16 | 7.61 |
| Idaho | .3 | 2.2 | 0.58 | 4.49 |
| Illinois | 454.9 | 200.6 | 54.17 | 25.50 |
| Indiana | 12.0 | 4.4 | 3.15 | 1.29 |
| Iowa | 2.0 | 6.4 | 0.74 | 2.53 |
| Kansas | 6.2 | 20.4 | 3.27 | 11.46 |
| Kentucky | 7.8 | 15.0 | 2.79 | 5.14 |
| Louisiana | 163.2 | 126.3 | 64.16 | 59.25 |
| Maine | 12.8 | 30.0 | 14.38 | 35.05 |
| Maryland | 29.9 | 50.8 | 13.93 | 30.27 |
| Massachusetts | 167.7 | 22.8 | 36.17 | 5.15 |
| Michigan | 253.3 | 34.1 | 41.74 | 7.10 |
| Minnesota | 41.9 | 62.6 | 14.49 | 23.66 |
| Mississippi | 61.1 | 51.4 | 29.20 | 25.53 |
| Missouri | 48.7 | 119.2 | 12.46 | 29.89 |
| Montana | 11.6 | 9.9 | 23.67 | 18.41 |
| Nebraska | 1.0 | .6 | 0.71 | .39 |
| Nevada | .2 | .7 | 1.82 | 6.56 |
| New Hampshire | 14.6 | 14.0 | 27.26 | 27.31 |
| New Jersey | 81.1 | 87.0 | 17.54 | 20.04 |
| New Mexico | 24.4 | 15.2 | 44.71 | 36.12 |
| New York | 612.7 | 526.0 | 43.25 | 40.62 |
| North Carolina | 21.8 | 136.4 | 5.89 | 39.25 |
| North Dakota | — | † | — | † |
| Ohio | 9.2 | 10.4 | 1.20 | 1.55 |
| Oklahoma | 5.1 | 12.0 | 2.24 | 4.70 |
| Oregon | 5.4 | 26.3 | 3.56 | 25.82 |
| Pennsylvania | 127.0 | 121.7 | 12.08 | 11.98 |
| Rhode Island | 38.9 | 27.0 | 52.15 | 39.60 |
| South Carolina | 76.7 | 40.8 | 39.27 | 21.83 |
| South Dakota | 12.4 | 2.6 | 21.47 | 3.63 |
| Tennessee | 71.7 | 91.0 | 23.19 | 31.60 |
| Texas | 18.6 | 26.7 | 2.61 | 4.33 |
| Utah | .3 | 4.0 | 0.59 | 7.53 |
| Vermont | 2.9 | 7.9 | 7.90 | 20.53 |
| Virginia | 5.4 | 23.9 | 1.81 | 8.88 |
| Washington | 21.6 | 12.6 | 9.15 | 7.62 |
| West Virginia | 60.8 | 76.0 | 32.26 | 41.11 |
| Wisconsin | 4.6 | 1.1 | 1.41 | .41 |
| Wyoming | 2.3 | 3.2 | 8.75 | 13.68 |
| | $2,827.1 | $2,424.7 | $19.35 | $18.90 |

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* *Financial Statistics of States* and *Compendium of State Government Finances*
† Sinking fund assets in excess of funded or fixed debt

and can be ignored except for a few states and in times of economic distress. For a number of states, the debt shown is small. If only the debt for which the "full faith and credit" of the state is pledged were included, some eight of the states besides North Dakota would show no net long-term debt. In 1948, these were Florida, Georgia, Idaho, Indiana, Kentucky, Nebraska, Oklahoma, and Wisconsin. Even as stated, the net per capita debt was less than $5.00 for more than a third of the states.

**Causes of state debt.** Until after World War I many states pursued a policy of issuing few or no state obligations, which was partly the result of the bad experiences related above. Two major factors brought about a change: highway construction, and bonuses to war veterans. The first was a result of the rise of the automobile and the motor truck. Adequate intercity highway construction seemed a state or federal, rather than a local governmental function. The states levied taxes on gasoline to finance the new construction but bond issues were needed to meet the heavy first cost.

Bonuses to war veterans were a cause of state debt after both World Wars. Reference to the table shows that about one third of state long-term debt outstanding in 1948 was accounted for by such payments to veterans, and other states have issued bonds since.[20] Highways accounted for another third. A considerable part of the remainder was used for public buildings and other fairly permanent improvements, such as hospitals, schools, parks, and reservations.

PURPOSES OF GENERAL LONG TERM STATE DEBT OUTSTANDING AT END OF FISCAL YEAR 1948*

(Millions of Dollars)

| | |
|---|---|
| Highways | $1,182 |
| World War II Veterans' Bonus | 1,050† |
| Schools | 158 |
| Hospitals and institutions for the handicapped | 114 |
| Public welfare | 67 |
| Other and unallocable | 664 |
| Total | $3,235 |

* Source: U.S. Bureau of the Census, *Compendium of State Government Finances in 1948*, p. 37.
† Issued in Connecticut, Illinois, Massachusetts, Michigan, New Hampshire, New York, and Rhode Island.

The increase in state debt during the 1920's placed a strain on but few of the states during the depression of the 1930's. Only one, Arkansas, actually defaulted. This occurred in 1932 in connection with certain bonds issued for road construction, and it was finally cared for through a debt adjustment put into effect in 1934.[21]

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[20] As of January, 1950, eighteen states had issued bonds for this purpose. The last, Washington, issued an obligation secured only by revenues from a tax on cigarettes without pledging the full faith and credit of the state. Total amounts planned to that date totalled $2.5 billion, some of which was to be paid from surplus cash and current receipts.

**State financing for business ventures.** The unfortunate experiences of the states in their early history with business ventures such as railroads, canals, and banks have resulted in many constitutional prohibitions. However, some states, chiefly the agricultural ones, have been active in this field more recently. South Dakota, under the Rural Credits Amendment to the Constitution in 1916 and 1918 and under subsequent acts, was authorized to borrow sums not to exceed $50 million for the purpose of making loans on farm mortgages. A law passed in 1927 repealed some of the provisions of former laws and reduced to $47 million the amount of bonds that might be issued. On June 30, 1934, the rural credit bonded debt amounted to $44,469,000. North Dakota, under the auspices of the Nonpartisan League, a socialistic farmers' party, sold, in 1919, some $2 million of bonds in order to provide capital for the Bank of North Dakota. At this time $5 million of bonds of the mill and elevator series and $10 million of real estate bonds were also authorized. In 1922, and again in 1923, the amounts of authorized real estate bonds were increased, and at the close of 1934 there were outstanding $37,411,700 of these bonds, supposedly self-supporting from the income of the mortgages acquired. At the same time there were outstanding $3.5 million of bonds that had been issued to furnish the necessary funds for the erection and operation of state-owned mills and grain elevators and $1 million of the bank series.[22] Minnesota also issued rural credit bonds to make loans to farmers. The plan, intended to become self-supporting, was unsuccessful, and, on July 1, 1933, the Rural Credit Bureau ceased operations as a lending agency and went into the hands of a conservator.[23]

Massachusetts offers another example of the extension of state credit to aid private enterprise. Under the provisions of the Public Control Act of 1918, any deficiency in the revenues of the

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[21] For a statement of the plan consummated by the Refunding Act of 1934, see *Moody's Manual of Investments. Government Securities* (New York: Moody's Investors Service, 1935), pp. 126–130. For a general account that indicates some of the means by which pressure can be exerted upon even a sovereign state, see Broderick, John P., "Arkansas Restores Credit Standing," *Barron's*, June 4, 1934, p. 15.

[22] For a classification of North Dakota's debt, and validating acts, see *State and Municipal Compendium*.

[23] *State and Municipal Compendium*, December, 1934, p. 16.

Boston Elevated Railway Company below the cost of service is met by the commonwealth, which then assesses the cities and towns served by the company In 1923 legislation was passed requiring either the state or the Boston Metropolitan District to purchase $5 million of maturing bonds of the company [24]

It was this type of financing that led to the widespread defaults and repudiation that characterized the 1830's and the 1870's The functions of the state center around the exercise of those sovereign powers ordinarily performed by governments and not delegated to our national Government legislative and administrative control of local problems, building and maintenance of good roads, policing, supervision of local governments, maintenance of state educational institutions, and so forth An active participation in private enterprises through the use of state credit has almost invariably led, sooner or later, to mismanagement and financial loss

**State credit standing.** Because of the relatively moderate level of state indebtedness, an elaborate statistical analysis of financial position is not usually regarded as essential Only when the over-all figures show a very much above-average debt burden is credit standing likely to be affected For most states credit standing is the result of broad economic factors rather than the specific amount of debt Measures that reflect industrialization and wealth will indicate this standing Resulting differences will cause relatively minor yield differences Statistics found in the investment services and in bond offering circulars are ordinarily aimed at reflecting the details of these two broad influences In some states a very small debt results in a "scarcity factor" that results in an exceptionally high price and low yield that arises from local tax factors or other special demand influences rather than credit standing

Formerly, many of the states shared in the local general property tax revenues, chiefly assessed against real estate With the passing years, this tax has been left more and more for local revenue purposes Today the state more often comes to the relief of the local taxpayer by collecting taxes from other sources and extending aid to the local community for such purposes as schools and highways A clearer idea of the broadened base for state revenues may be had by examining the percentage breakdown of major sources, other than borrowing, for 1948

The table shows a major part (40 per cent) of the states' revenues are from taxes on sales and gross receipts Three commodities—gasoline, liquor, and tobacco—contribute about one half of this

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[24] *State and Municipal Compendium*, June, 1935, pp 38–39

SOURCES OF STATE REVENUES OTHER THAN BORROWING 1948

| | | | |
|---|---|---|---|
| I Taxes | | | |
| A On Sales, Use, and Gross Receipts | | | 40% |
| 1 General sales | | 15 | |
| 2 On particular commodities or services | | 25 | |
| a Motor vehicle fuel | 13 | | |
| b Alcoholic beverages | 4 | | |
| c Tobacco | 3 | | |
| d Other | 5 | | |
| B Licenses and Privileges | | | 10 |
| a Motor vehicles | 6 | | |
| b Others | 4 | | |
| C Income | | | 11 |
| a Corporations | 6 | | |
| b Individuals | 5 | | |
| D Property | | | 3 |
| E Inheritance and Estate | | | 2 |
| F Unemployment | | | 11 |
| G Miscellaneous | | | 1 |
| Total taxes | | | 78% |
| II Charges and Miscellaneous Revenues | | | 8 |
| III Federal Aid | | | 11 |
| Total | | | 100% |
| Total General Revenues | | | $10,025,000,000 |

Source Dept of Commerce, *Compendium of State Government Finances in 1948*, pp 7, 10–15

amount and general sales taxes about three eighths When the 6 per cent for automobile and truck licenses is added to the gas taxes' 13 per cent, we see that the highway users contribute almost a fifth of the revenues We have noted earlier how important an element highways were in the creation of state debt Income taxes, both corporate and individual, contribute 11 per cent and Federal aid 14 per cent Unemployment compensation levies go into a special fund to care for assistance to the unemployed and so are not regarded as ordinary income The state also charges for certain services that make up 8 per cent of total revenues The part played by other lesser sources of revenue may be judged from the table

The study of revenues and expenditures over a period of years is useful, since it may throw light on the ability of the state to care for its obligations in good times and bad On the one hand, the ever-growing functions of the state create a heavy burden, much heavier than existed in the last severe depression This is particularly true of the cost of the various welfare services, such as unemployment, old age assistance and the like, which increases in bad times On the other hand the ability to handle this load has been increased by the broadening of the sources of revenues Although economists are generally critical or hostile to sales taxes, the fact that they are based on ordinary consumption purchases that are well maintained over the business cycle tends to make them produce a rather stable revenue In contrast, income taxes, which economists are inclined to favor because of their correlation with ability to pay, fluctuate greatly over the business cycle This is because of the volatility of corporate profits, the inclusion of capital gains in personal income and the personal exemption factor The deduction of a constant exemption factor leaves the margin of taxed income more fluctuating than total income

Because of the changing character of state financial problems, the record of the past is only a partial guide to probable future performance The comparatively moderate indebtedness of most states has given the investment community confidence in the quality of their bonds

**Taxation of state bonds** The tax situation of state bonds differs somewhat from that of Federal Government obligations Under our Constitution, Government obligations are exempt from all state and municipal taxes This exemption is regarded as necessary if the sovereignty of the Federal Government is to be maintained No specific prohibition in the Constitution prevents the Federal taxation of state obligations but some have argued a similar theory of reciprocal immunity based upon the doctrine of state sovereignty All state and municipal bonds are presently exempt from all Federal taxes, except estate taxes, but such bonds may or may not be taxed by the state in which they are issued, and they may be taxed by another state if located within the taxing state or if the owner resides within the jurisdiction of the taxing state The same exemptions that apply to the taxation of state or municipal bonds apply to the income from such bonds

The Sixteenth Amendment to the Federal Constitution gives Congress power "to lay and collect taxes on incomes, from whatever source derived, without apportionment among the several states, and without regard to any census or enumeration" While the question as to whether the income from state and municipal bonds can be taxed under the Federal income tax has not been passed on by the Supreme Court since the passage of that amendment, and no attempt has been made by Congress to tax such income, it was formerly felt that such an attempt would be declared unconstitutional A changing attitude of the Supreme Court makes it quite possible that such income will be deemed taxable in the future On the other hand, income from the bonds of one state is taxable where such bonds are held by the resident of another state Thus the income from Connecticut bonds is taxable where such bonds are held by a resident of Massachusetts Many states exempt their own obligations from all local and state taxes, in the belief that this exemption enables them to borrow money more cheaply than would otherwise be the case

**Market for state bonds** State bonds are held by the same type of investor as the more important municipal obligations, which are discussed in the next chapter It is sufficient to note here that formerly these bonds went largely to the institutional market saving banks, life insurance companies, and trustees, whose investments were restricted by law Prices and yields reflected the high standing accorded these obligations When the Federal Government ceased to issue any exempt securities in 1941 and income taxes rose sharply under the impact of the War, there was a strong tendency for state and municipal bonds to move into the hands of well-to-do individuals who found the tax exemption most valuable Short maturities, however, were suitable for commercial banks, who could buy them on a low-yield basis not only because of the low alternative return on other short-term investments but also because of the saving on the corporation income tax

With the larger postwar increase in the volume of state and municipal obligations, prices have fallen and yields have risen again Should the supply increase sufficiently yields would be expected to rise to the point where they would give little weight to tax status. This condition would be necessary to revive the buying of institutions like life insurance companies and mutual savings banks, which find little or no advantage in tax exemption

# 20

# Civil Obligations—Municipal Bonds

**How municipalities are created.** Municipalities do not occupy a position of sovereignty, but are corporations created by the state and are subject to control by the legislature of the state in which they are situated In fact, they owe their existence to charters granted by the state, as the result of either a special act or a general law Ordinarily, the state grants to municipalities the following powers the right to make regulations necessary to the health, safety, welfare, and comfort of the community (known widely as the police power), the power of taxation, and the power of eminent domain It is not generally held that the power to borrow exists, unless such power is specifically mentioned in the legislative or constitutional instrument under which the municipality exists Where the power is actually granted, it is also regulated In other words, municipalities derive their borrowing powers from the state and are limited by the state in the exercise of such powers

**Regulation of municipal borrowing** From the investors' standpoint, therefore, it is important to know what limitations are placed on the borrowing operations of the municipality Are these regulations adequate to protect the investor, by preventing unwise use of credit and an unwarranted expansion in borrowing operations, or are they so set up as to be of little value? As an example of the completeness with which municipal debt may be regulated, the more important provisions of the Local Bond Act are presented here, under which the borrowing operations of municipalities in the state of New Jersey are regulated[1] This act provides substantially as follows

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[1] *Moody's Manual of Investments Governments* (New York Moody's Investors Service, 1936), pp 928–929

PERIODS OF USEFULNESS Article III specifies the periods of usefulness for various kinds of improvements It is required that bond issues be paid off within the useful life of the improvement

SALES Article V requires the public sale of all bonds except issues of $10,000 or less, which latter may be sold at private sale without bidding

FUNDING AND REFUNDING, RENEWALS AND EXTENSIONS In order to permit municipalities to meet the emergency of depression, refunding and extensions are provided for but, in order to prevent the abuse of indefinite continuance of debt, there must be a carefully considered plan, which is approved by a state funding commission composed of the attorney-general, the State Auditor, and the State Tax Commissioner

DEBT LIMITS One of the principal features of the act is the establishment of a real debt limit, but it is recognized that, in view of the large number of municipalities which are over the new limit, a temporary provision must be made for necessary borrowing until the municipalities can come within those prescribed limits The debt limits provisions, in accord with those in other states, eliminate current accounts, delinquent taxes and similar items, which very much complicated the statements under the previous law, and eliminate the numerous exemptions and deductions The provisions require the inclusion in the gross debt of all notes and bonds whether issued or authorized but not issued pursuant to this or any other act, except tax anticipation, tax revenue, and tax title obligations The gross debt also includes all notes and bonds for school purposes, whether authorized by the municipality or by an overlapping school district The prescribed limit for municipalities is 7% and for counties 4% of the average of the last three assessed valuations

In computing the net debt, there may be deducted only (a) sinking funds and funds in hand applicable to the payment of any part of the gross debt not otherwise deducted, or the equivalent, (b) notes and bonds authorized to finance publicly owned self-liquidating utilities and enterprises and (c) notes and bonds authorized for school purposes in an amount not exceeding 6% of the average of assessed valuations The act strictly defines a "self-liquidating" purpose and provides that to the extent that the utility or enterprise is not self-liquidating within the provisions of the act, the amount of the deficit in the income (on the actual record of the previous fiscal year) applicable to interest and debt requirements, shall be capitalized at 5% and the capital sums so determined shall not be deductible In order to permit the construction of necessary new water and sewer systems, the act permits the deduction of notes and bonds authorized to finance the construction of such a system, for one year after completion, provided that the State Board of Public Utility Commissioners shall have determined by order that the income will be sufficient to make the utility or enterprise self-liquidating within the definition of the act

To permit necessary financing in numerous municipalities which it is expected will be over the prescribed limit, particularly after they shall have funded existing indebtedness, the act (Section 208) permits the authorization of notes and bonds to comply with the order of the State Board of Health or of any other superior governmental authority, or when the expenditure is the result of fire, flood or other disaster, or the recovery of judgment, unless such judgment is entered upon default or by consent For the same reason, and in accordance with the Governor's recommendations, the act permits, in the case of a county or municipality which is shown to be over the prescribed limits as of February 28, 1935, the issuance of notes and bonds in the principal amount of 60% of debt amortized after February 28, 1935, and this is made cumulative up to 2% but ends by limitation on Jan 1, 1940 The act also provides that notes or bonds may be issued if the net debt together with the gross school debt does not exceed 11% of the average valuation, this provision will benefit only the few large municipalities having a low school debt And outstanding obligations and existing indebtedness may, of course, be renewed or extended, and funded or refunded

New Jersey also in its 1933 "Cash Basis Act" provided that while a municipality might fund its then current debt, issuing any necessary funding bonds, it should thereafter make up its annual budget on a cash basis as long as any of the bonds are outstanding, subject only to amendment or repeal by the State Legislature after January 1, 1939 By a cash basis is meant that the total estimated cash receipts of the fiscal year must at least equal the total cash appropriations for the year In estimating the receipts from the taxes of the municipality under this law, it is provided that no greater percentages of collections can be anticipated from the current and back taxes than were actually received in cash on the corresponding taxes during the preceding fiscal year In order to realize the cash necessary to balance the annual receipts and appropriations on this basis, the Act provides that the budgets of the municipality shall include a "Reserve for Uncollected Taxes" sufficient in amount to compensate for any anticipated delinquency in taxes Should a cash deficit occur despite the above described provisions, the Act requires that such deficit must be included in the following year's budget as a cash item It is also required that before the adoption of such budgets, the State Auditor must certify to their compliance with the Act The provisions as to the so-called "cash basis" are by the Act made a contract between the holders of the bonds and the municipality "enforceable by mandamus by any holder on behalf of all other holders," and to remain in force until the bonds are paid This contract was not to be changed until after January 1, 1939, and then only by an act of the Legislature The Act requires that such funding bonds to be included hereafter in calculating the power of the City to become otherwise indebted, and, to assure the presence of assets behind the bonds, the Legislature has permitted the issuance of the bonds only up to the amount of the outstanding delinquent taxes of the preceding four years outstanding at the end of the preceding year Bonds issued under chapter 60 shall mature in annual installments, the first of which shall be payable not later than two, and the last of which shall be payable not later than 20 years from the date of the bonds

Almost without exception there will be found, either in the state constitution or in some special legislative act of the state, limitations covering not only the purposes for which bonds may be issued by municipalities, but the amount of debt that the municipality may incur Typically these limit the net debt of cities, counties, towns, and school districts to some per cent of assessed valuations Water, and sometimes other self-supporting debt is excepted

Some of the other restrictions frequently found refer to the manner in which debt may be incurred For example, many states require that all proposed bond issues first be referred to the voters for approval, except in the case of temporary loans for anticipating taxes The length of time for which bonds may run is frequently specified, as well as the form in which they may be issued In this connection it is interesting to note that many states now require that all bonds be issued in serial form, in order to do away with the less desirable sinking fund method of retirement

**Legality of issue** The existence of these various and rather detailed limitations on the borrowing powers of municipalities, as well as further prescriptions as to the form and procedure by which municipal bonds may be issued, creates a complex legal situation that is of no small importance to the investor A bond that has been issued without complying with all the requirements set forth in the state constitution and with the legislative acts regulating municipal bond issues in the state may be held invalid If a negotiable instrument is void in its inception, it has no legal existence and therefore is nonenforceable In other words, a municipality cannot make a promise or enter into a contract that is enforceable in court unless the sovereign state has first granted it the power to do so Further, the municipality, in the exercise of its power to create debt, must issue its bonds in precisely the manner prescribed, within the debt limits specified, and for the purposes allowed Even a technical violation of the proper procedure may invalidate an issue of municipal bonds and make them void The argument, however, goes somewhat further The position of all officers in charge of municipal affairs is of a fiduciary nature Accordingly, the municipal treasurer might be in a position where he is legally unable to pay the invalid obligations of his city, even though they have been sold to innocent purchasers, unaware of the irregularity in issue To pay in such a case would involve a criminal act Unless the obligations of the municipality have been issued in accordance with all the technical requirements of the law, therefore, it may become impossible to pay the obligations, however strong the moral grounds may be

Thus, if a municipality has no authority to create a given issue of bonds, the bonds cannot be paid unless they are subsequently validated by legislative action Or, if the bonds have been issued in the face of constitutional prohibitions, the only way to secure validation is by means of constitutional amendment Of course, if the only difficulty lies in a technical failure to carry out the procedure of issue, then it may be necessary only to secure ratification or an estoppel Ratification may already have occurred, if the bonds were sold for value to purchasers who had no notice of the irregularity The mere fact that the municipality has received payment, used the proceeds, levied taxes to pay principal or interest, or both, or has extended or refunded the bonds may be considered sufficient ratification And, where the courts fail to find ratification, they may hold, where the purchaser for value had no notice of the irregularity, that the municipality is estopped from avoiding payment on the grounds of invalidity This estoppel applies particularly to a situation where the recital of the bond states that certain facts exist, that certain acts have been performed or certain conditions complied with, provided the properly authorized officers of the corporation made the statements

**Need for specialized legal services in purchasing municipals.** *In view of the intricacies involved in the whole matter of bond* authorization, it is virtually impossible for the individual investor to make a proper investigation of the acts leading up to the issue, the statutes authorizing the issue, or the procedure involved in the issuance of the bonds These are all matters for attorneys who specialize in examining and passing on the validity of municipal issues, and it is necessary for the private investor to rely on the opinion of such a firm of attorneys In fact, it is customary practice, when one is buying municipals, to insist that a certified copy of a satisfactory legal opinion accompany the bonds The work of determining the legality of municipal issues is so complex and so specialized that there are at the present time only a relatively few legal firms in the United States whose opinion is acceptable to the general run of municipal buyers[2]

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[2] The legal work in connection with the examination of the validity of municipal bonds is exacting and complex The following summary of the major steps

**Validation by court decree or short statute of limitations.** There is a growing tendency to overcome the danger of subsequent litigation and invalidation by means of judicial validation or a short statute of limitations Thus, in Georgia, when a proposition to issue bonds has been adopted at an election, notice is given to a designated state official, who starts action against the county or municipality that desires to issue the bonds An order is obtained directing the issuing unit to show cause why the bonds should not be "confirmed and validated," and a hearing is provided at which "all questions of law and fact are settled " If the proceedings are approved, a judgment is entered for the municipality or county, which is conclusive evidence of the validity of the issue In other states it is provided that if within a relatively short period after the publication of notice of the proposed issue—say, 20 days—no objections are raised against the validity of the issue, thereafter no objection may ever be raised

**Doctrine of estoppel· New York and New Jersey.** In New York and New Jersey, the legal doctrine of estoppel is used to answer questions regarding the validity of municipal bonds The New York statutes state the following·

> an ordinance creating a funded debt may provide that the bonds therein authorized shall contain a recital that they are issued pursuant to law and an ordinance of the common council, as provided by Section 60 of the Second-class Cities Law Such recital, when so authorized, as aforesaid, shall be conclusive evidence of the regularity of issue of said bonds and of their validity [3]

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taken will give the student some idea of the scope of the task

1 A search of the statutory authority

2 A determination that the statutory authority is not in conflict with constitutional prohibitions or limitations

3 A finding that

(*a*) The bonds have been executed by the authorized officers

(*b*) They are in the required form

(*c*) They contain the required recitals

(*d*) They are payable within the time, at the place, and bear such rate of interest as may be required by constitution or statute

If registration or approval by any designated officer is required, it must be found that the bonds have been so registered or that such approval has been given

4 The examiner should have assurance on which he may properly rely that the conditions necessary for the legal issuance of the bonds have actually been fulfilled A certificate of the proper officers is usually sufficient

5 But, if the law requires a public record as the exclusive evidence of certain facts, purchasers are charged with knowledge of the facts so appearing

6 The examiner must know as a matter of law whether there is legal authority for the levy or collection of taxes sufficient for payment

[3] Cons Laws, Chapter 54, Section 60

Under the Local Bond Act of New Jersey, it is provided that the validity of bonds shall not be questioned in any suit commenced after the lapse of 20 days from the first publication of the ordinance and resolution authorizing them, unless issued in violation of the referendum provisions In the case of Dale vs Borough of Bayhead, bonds were sustained by reason of this provision The act also declares that bonds reciting that they are issued under the act are incontestable [4]

Commendable as these attempts are, nevertheless it is good practice, in purchasing municipals, to insist on a certified copy of a legal opinion rendered by a competent firm of attorneys Not only does such legal backing offer protection to the purchaser, but a subsequent sale of the bonds is often very difficult without an accompanying opinion Even this opinion, however, does not protect against forgery and overissuance, that is, against fraudulent signing and disposing of more bonds than were originally authorized, by officers of the municipality With corporation bonds, this contingency is provided for by certification by a trustee under the bond indenture There are, it is true, some trust companies that offer this service in connection with municipal bond issues, but they are rarely ever called upon to operate The investor is therefore compelled to rely largely on the carefulness of the issuing house in checking up these matters

**Method of floating municipal bond issues** Unlike the procedure so often followed in the negotiations between the banker and the corporation, which lead up to a sale of corporation bonds, municipal bonds are generally sold at a public sale to the highest bidder The former transaction is private and confidential, the latter, public and competitive, for most states require that municipalities within their jurisdiction sell their bonds on an open and competitive basis The customary procedure, therefore, is for the municipality to advertise the sale of its bonds in advance and to receive and to open bids for the issue on a specified day The municipality, however, reserves the right to reject any or all bids, if its officers feel that they are inadequate [5]

In its advertisement the municipality makes the offer subject to legal opinion This method is more desirable than that of having the buyer submit his bid subject to a subsequent examination, which may result in the discovery of some irregularity in the issue Under such a condition the city might face a vexatious or embarrassing delay in receiving funds from the sale Any bid to be considered must be accompanied by a deposit as evidence of good faith Without such a requirement, a house lacking financial responsibility might become the successful bidder and be unable to consummate the transaction Or, if the successful bid were close to the market value of the bonds, such a bidder might turn his deal over to another house at a profit In one of the bond sales of the United States Government during Cleveland's term of office, a New York bank clerk, having no financial backing at all, entered a bid that was successful and sold it to a responsible house for a substantial sum Bids of this kind, known as "postage stamp bids," were common at one time, but have now been made impossible by the requirement that a certified check accompany each bid

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[4] *State and Municipal Compendium,* June, 1939, p 133

[5] Examples of bond proposals and negotiations may be studied in the "State and City Department" of the *Commercial and Financial Chronicle*

**Different types of municipalities; economic and legal status.** We may next consider briefly the different types of municipalities customarily issuing bonds Generally speaking, the term "municipality" is used to include all municipal or quasi-municipal bodies, including school and special taxing districts Counties, although they may be called municipal corporations, as in New York,[6] are more accurately major political subdivisions of the state, that is, legal organizations vested with some of the customary municipal powers, but not true municipalities There is no legal difference, it is true, between the bonds of a county and those of a city, but there is the practical difference that counties may issue bonds for only relatively few purposes Also, the total amount of county bonds outstanding is generally small in relation to the assessed valuation of the taxable property in the county

The economic status of county bonds should require them to be rated somewhat higher than bonds of the included municipalities In most states the county, after determining the amount of annual budget, apportions this over the various municipalities and other taxing units on the basis of assessed property therein The county levy thus constitutes a definite claim to the revenues raised by the local taxing unit Cities, on the other hand, have more or less complete self-governing powers by virtue of the typical charters under which they operate Such powers include that of taxation as well as the incidental power of borrowing in anticipation of revenues Thus, city bonds, as a class, probably command a slightly better price than county bonds, even though theoretically county bonds ought to rate ahead of bonds of cities and towns Cities are likely to be run on a more businesslike basis than are counties, and to represent a more highly organized unit

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[6] *Thompson's Laws of New York 1939,* Chapter 29

The relationship between county and city, however, makes necessary a slightly different analysis of debt and property values than is ordinarily given in the case of county bonds  The customary method for setting up a county debt statement is to state the assessed valuation of property within the county, the population, and the gross debt  The same property that provides security for the county debt also provides for the payment of all the municipal and special district debts within the county, as well as for its proper share of the state debt  Accordingly, the total debt within the county may be estimated by finding the total net debt of the municipalities within the county and adding this total to the net county debt  The state debt may then be apportioned by finding the proportion of total state assessed valuation located within the county and adding this percentage of the state's net debt to the county debt  The result so determined, added to the previous total, will give the actual debt supported by the county's property  The following example will show how these corrections may be made in a given case

ANALYSIS OF HUDSON COUNTY, NEW JERSEY, DEBT 1947

| | |
|---|---|
| Net debt—Hudson County proper | $ 16,908,922 |
| Net debt of cities located in Hudson County | 79,219,074 |
| Net Debt Covering County Area | $ 96,127,996 |
| Proportionate share of state debt | |
| $\frac{\text{County assessed valuation (1947) } 1{,}013{,}867{,}489}{\text{State assessed valuation (1947) } 5{,}334{,}559{,}000} \times 94{,}960{,}000 =$ | 18,048,000 |
| Total Net Debt | $ 114,175,996 |
| Assessed valuation | $1,013,867,489 |
| Ratio debt to assessed valuation | 11 3% |
| Population (1940) | 652,040 |
| Per capita debt | $175 11 |

Because certain states have abandoned the local property tax as a source of state revenue, some analysts prefer to omit the burden of any state debt in computing the debt burden of municipalities within such states  Frequently the state now turns back a portion of its revenues to the municipalities to help support their activities, especially in the matter of schools and highways

**Special municipal districts** In addition to the city, there are minor political units, which may have all or part of the powers granted to cities, depending on their size and the state in which they are situated  Towns, villages, or boroughs are usually political units smaller than the city and are endowed with fewer powers, although, so far as borrowing and taxing powers are concerned, they are in essentially the same situation as the city[7] From the investor's standpoint, therefore, the difference is mainly economic The village, the borough, or the town suggests a small population, a rural community, and a lack of diversified industry

In addition to the county, city, or town, the state may create other districts and allocate to these certain powers not delegated to the city or the town These districts, furthermore, may be superimposed on a city or a town already in existence Such districts may be formed for the purpose of operating schools, in which case they are called school districts, or the essential purpose may be to build and operate roads, drainage projects, irrigation, or to serve any other ends that may make the creation of such a district desirable[8] The legal characteristics of these districts may be described as follows

> The school district or road district is usually invested by general enactments operating throughout the state with a corporate charter, the better to perform within and for the locality its special function, which is indicated by its name It is but an instrumentality of the state and the state incorporates it that it may the more effectually discharge its appointed duty Considered with respect to the limited number of their corporate powers, the bodies above named rank low down in the scale or grade of corporate existence, and, hence, have frequently been called quasi corporations This designation distinguishes them, on the one hand, from private corporations aggregate, and, on the other, from municipal corporations proper, such as cities or towns acting under charters, or incorporating statutes, and which are invested with more powers and endowed with special functions relating to the particular or local interests of the municipality, and to this end are granted a larger measure of corporate life[9]

A different kind of district, and one that is becoming more common, is the "authority" Ordinarily, it is distinguished from the tax district by its conduct of some form of operations from which it derives revenues, tolls, or fees The debt of such an authority becomes a first charge on this income, and in some cases the authority may have recourse to the taxing power, if this is necessary [10] Typically, however, these organizations are obliged to rely solely upon their earnings from the project that they have been formed to operate, such as utilities in the water, electric, transit, and gas fields, and bridges, tunnels, and turnpikes run on a toll basis [11] It will be noted that a few tax districts formed to construct bridges or irrigation works have been very similar in character

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[7] The political unit following the city is given different nomenclature in different states In most New England States it is called the town, although the term borough is used in Connecticut to designate the wider area known as the town in other New England States, in New York, the term village In Louisiana, the term parish is used for the county unit of government

[8] The Chicago Sanitary District was incorporated by the State of Illinois in 1899 and comprises some 442 square miles of territory, including the city of Chicago This district was incorporated solely for the purpose of enabling a section of the state to construct and finance the disposal of sewage It has full taxing powers and may borrow money to acquire the necessary plant and other assets to perform its work It has no other functions The Miami Conservancy District of Ohio was incorporated for the sole purpose of enabling the people within the drainage area of the Miami River to finance the work necessary to protect themselves against floods and washouts Other special districts of this type are the Moffat Tunnel District including Denver, Colorado

[9] Dillon, J F, *Law of Municipal Corporations* (Boston Little Brown & Co, 1911), p 67

**Effect of superimposed districts on true debt of localities** The obligations of the municipal corporations, other than those issuing "revenue" bonds, are secured in essentially the same way as are those of cities and towns—that is, by the taxing power applied to the property within the district The presence of such districts, however, complicates the problem of analyzing municipal bonds, for it means that a further set of obligations is now imposed on the same property Thus, where the school district is practically coterminous with a city, as it often is, the aggregate debt of the city includes not only the city debt proper but the school district debt as well In selling the bonds of the school district, a bond house may show on the bond circular only the net school debt, assessed valuation, and population for the district, without reference to the city obligations, or to the municipality's share of the county debt In reality, the problem of determining the exact net debt of any given municipal district at a particular time is a rather complex one Further attention is devoted to this matter in subsequent parts of this chapter (see page 585)

**Special assessment bonds** The obligations of the municipal and quasi-municipal corporation are not to be confused with special assessment bonds The former represent the full obligations of a municipality or a specially created district and are usually payable from taxes on the property located in such municipality or district Special assessment bonds, on the other hand, are not general obligations of the issuing unit unless so specified, but are payable from assessments against the specific property benefited by the expenditure of the borrowed funds Thus, with quasi-municipal bonds—that is, school, road, irrigation, or levee districts—the problem of financial analysis centers in part on the relation of debt to the assessed value of property within the area in much the same way that a similar study is made in analyzing the bonds of ordinary municipalities In considering special assessment bonds, however, one must recognize that only a small part of the entire property of the issuing municipality may be assessed Such bonds, therefore, should be purchased only after the investor has studied the character of the neighborhood responsible for payment, the stability of values within its limits, and its ability to meet assessments necessary to pay principal and interest The supporting property may be largely vacant land in a new and untried subdivision This investigation is necessary, unless the municipality within which the specially assessed property lies pledges its full faith and credit for the ultimate payment in the event that revenues from special assessments are inadequate[12]

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[10] For example, see the Metropolitan Water District of Southern California, which began operations in 1941 Most of the receipts of this district are from taxes levied by the 16 cooperating municipalities rather than from sales of water and electricity

[11] Thus, the Port of New York Authority, including a part of both New York and New Jersey, has issued bonds chiefly for the construction of bridges and tunnels that are dependent for their interest and principal for the most part upon the tolls and revenues derived from operations The Port of New York Authority has no taxing powers

The distinction made between special assessment and tax district bonds should not be interpreted as indicating that, as a class, the former are less desirable than the latter As a matter of fact, there have been many defaults in the municipal field among drainage, irrigation, and road district bonds in the West and the Southwest The principal reason for these defaults has been the lack of adequate property values to support the charges incurred through borrowing operations[13] It may happen that the incorporated district comprises farm lands of doubtful value The issuance of bonds is undertaken to provide funds for improvements that are expected to raise values If the project to be financed is ill-advised, or improperly executed, the added values fail to materialize, and the district becomes bankrupt Where the debt service requires a tax so high that it is not profitable for the landowner to meet the assessments, a sheriff's sale for taxes is of little assistance to the bondholders, for it is more than likely that the price realized for the land will fail to cover taxes, and thus the bondholders will be required to bid in order to protect their equity This condition is especially true where the district lacks fertility or an adequate rainfall The purchase of irrigation bonds requires an intimate knowledge of the project, its engineering problem, and the ultimate increase in values that may reasonably be expected to materialize

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[12] The student will do well to study the case of Superior, Wisconsin, which defaulted on certain special assessment bonds in 1904 See *Commercial and Financial Chronicle*, Vol 79, p 2107

[13] For specific examples, the reader is referred to the following

Denver St Vrain Municipal Irrigation District and Denver-Greeley Valley Municipal Irrigation District, Colorado (see *Commercial and Financial Chronicle*, Vol 92, p 476)

San Arroga Irrigation District, Colorado (*Commercial and Financial Chronicle*, "State and City Section," May 30, 1914, p 145)

See also List of Local Improvement District Bonds, State of Washington, in default as reported in various issues of *Bulletin*, Investment Bankers' Association, 1926 and 1927

The mere fact that a bond is designated as an assessment bond is by no means evidence that it is payable only from assessments against the property benefited The ill favor in which such bonds are now held has led municipalities to issue bonds to pay for local improvements, and to pledge their unlimited taxing power for the payment thereof

**Purposes for which municipalities may borrow.** The purposes for which municipalities may borrow are generally stated either in the state constitution or in the statutes that set forth the borrowing powers of the state's political subdivisions Frequently, municipalities are definitely prevented from using their credit for certain purposes, particularly for the purpose of assisting private enterprises Municipal borrowing may be divided into temporary and funded, or long-term, debt Temporary borrowing operations are the result of the peculiar characteristics of municipal revenues Municipalities derive their revenues largely from taxation Taxes, however, are collected as a rule only once a year, or at most twice a year, while the municipality is required to provide for almost continuous expenditures To meet this situation, municipalities are frequently obliged to borrow for current expenses Within limits, therefore, all full municipalities and other administrative districts are given power to resort to temporary borrowing in anticipation of taxes The instruments sold in such cases are called "tax anticipation warrants" and are paid upon the receipt of taxes

In contrast with this temporary, or short-term, financing are the loans of municipalities floated for the purpose of erecting public buildings, carrying out public improvements, or otherwise performing the logical functions of local government, which require too heavy an expenditure to be borne easily from the taxes of a single year Borrowing may also be undertaken in order to acquire and operate industries Ownership and operation of waterworks have long been a popular municipal business More recently, municipal operation of electric lighting plants, gas plants, and local transit has been undertaken. If the municipality is successful in the operation of these undertakings, the revenues therefrom will pay any debt charges incurred in the acquisition of the properties Such municipal debt is then regarded as self-supporting, that is, revenues from operation cover charges, and taxation is not required to meet any interest or principal payments The following list will suggest some of the more common purposes for which municipal debt is incurred

*Erection of Public Buildings*
- City Hall
- Libraries

*Protection*
- Police buildings
- Fire buildings and equipment
- Flood protection

*Public Improvements*
- Streets and paving
- Bridges
- Sidewalks
- Parks

*Sanitation*
- Sewage systems
- Incinerators
- Garbage disposal

*Education*
- Schools

*Municipal Utilities*
- Water
- Electricity
- Gas
- Traction

**Municipal operation of public utilities.** Whether or not it is good practice for a municipality to extend its activities to include the operation of public utilities is debatable The operation of water systems is so simple and standardized and so necessary to a community that municipal control of such enterprises is rarely questioned In regard to the operation of electric light and power, gas, or traction systems, however, municipal control may not be considered so desirable, for several reasons First of all, the opportunity for mismanagement, political corruption, and extravagance in the operation of such utilities is much greater than in that of water systems Furthermore, it is possible for those in power to conceal operating losses through inadequate maintenance and failure to charge adequate depreciation In other words, a city may embark on an extended program of municipal operation of public utilities that requires heavy borrowing, which may be enthusiastically authorized, on the assumption that it will be self-supporting Where municipal operation proves unsuccessful and charges are not earned, the debt becomes a charge for the taxpayer Probably the most striking example of a burdensome utility deficit has been the New York City traction system, previously mentioned in the discussion of public utilities (page 350) In that case the debt ran to a billion-dollar figure The burden upon the taxpayer for the operating deficit alone, excluding depreciation, ran to $30 million in 1948, to which there was added the financial or interest charges amounting to $41 million At that point the famous five-cent subway fare was increased to ten cents The Chicago Transit Authority represents similar municipal ownership with a debt about one-tenth as large but with the whole responsibility for the debt resting upon the earnings rather than upon the taxpayer Many major cities have a municipal system As pointed out earlier, the water utility is usually a municipal business In the electric field, municipal ownership has been the exception rather than the rule, although such ownership has increased since the beginning of the depression of the 1930's Federal water power developments have favored municipal systems in allocating their power sales

**Municipal revenue bonds** Because of the rise of the revenue bond to a place of importance in the municipal field, a discussion of their special character is in order[14] Their use has been extended not only to business operations, such as the municipal utilities just mentioned, but also to such distinctively governmental functions as bridges, highways, and sewage disposal Such bonds depend upon the earnings of an "authority" or other municipal body created to operate the given project In many respects, especially in the case of utilities, analysis runs along lines very similar to those for the corporate securities of private business, except that the municipal bodies issue only bonds and no stocks However, an "equity" may, in fact, be developed over the years through retained earnings or a policy of excessive depreciation On the other hand, the debt may exceed the worth of the supporting property through deficits, inadequate depreciation, or ordinary loss of economic value

While it is true that one cannot apply the rules for capital structure and coverage of fixed charges that are used in analyzing corporate securities, nevertheless the study should be directed to the same general objective, namely, the probable ability to pay The presence of certain possible differentiating conditions that might make the municipal project more successful in meeting its obligations than a similarly placed private company should be looked for (1) Where the private utility might have to struggle to obtain a rate increase from a regulatory body, the municipal utility may enjoy greater freedom to adjust its rates to changing cost conditions The chief check is likely to arise from fear of political consequences to the party in power from higher charges (2) Because of freedom from Federal corporate income taxes, and often other taxes, plus the cheapness of financing with tax-exempt bonds, the municipal business may start with a low scale of rates that will make any subsequent increases less unpalatable to the public (3) The municipal venture is likely to be free from subsequent competition, whether the project is an electric utility or a bridge, unlike a similar privately owned business (4) Finally, there is the possibility that in spite of an absence of municipal credit behind a revenue bond issue, the community might later come forward to support a financially weak venture Thus, the city might believe that a transit utility was so important to the community that the project merited the taxpayers' support Or a less successful project might be merged with a more successful one[15] On the other hand, a very successful project may be subsequently weakened by being loaded up with an uneconomic venture[16]

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[14] For more extended discussion, see L S Knappen, *Revenue Bonds and the Investor* (New York Prentice Hall, Inc, 1939) Treatment of these bonds when defaulted is covered in Chapter 6

The discussion of these matters raises the question of remedies in the event of default upon a revenue bond Some have deplored the customary absence of mortgage security Rarely would actual seizure of the property by the bondholders be a practical remedy Aside from the possible political harassment that could follow, there would arise the vexatious possibility of incurring tax liabilities once the owners were private persons rather than a municipal body The customary remedies ordinarily lie either in seeking a receiver to insure independent and able management, if that is a problem, or entering into mandamus proceedings to compel the existing management to increase its rates to a point that would restore solvency

In addition to the desire of the electorate for the services provided by revenue bond financing, three special factors help to explain its popularity (1) Municipalities that are close to the debt limits imposed by state law find this instrument a device for evading the law where the service can be self-supporting The evasion can be justified on the grounds that the taxpayer suffers no harm in the case of genuinely and certainly self-supporting utility services Sometimes, however, the device is used to permit additional debt to provide some service that many other communities are caring for out of general taxes and without making any special charge (2) Similarly, states whose constitutions contain strict provisions against incurring debt may use the revenue bond (3) The device has also been used to advantage in the case of projects designed to benefit the citizens of more than a single state, as in the case of the Port of New York Authority[17]

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[15] The history of the present Port of New York Authority shows how some of the earlier constituent projects were relatively unsuccessful but were strengthened by being combined with the very profitable Holland Tunnel

[16] Thus, a popular discussion of the Battery Brooklyn tunnel suggests its uneconomic character and the possible burden it may place upon the merged Triborough Bridge and New York Tunnel Authorities Thruelsen, Richard, "New York's Deepest Tunnel," *Saturday Evening Post*, March 25, 1950, p. 32

The popularity of the revenue bond and its probably expanding use is attested in a number of ways Its use, for example, is rapidly expanding in the field of sewage disposal[18] Likewise, turnpikes with no record of traffic or earnings but only the promotional estimates of future financial performance have been financed with revenue bonds In this manner, venture capital is obtained from the bond market The city of Seattle has been able to finance its well-established electric light and power system with a lien of the ninth order Even the railroads in their palmiest days would have been hard put to it to show a bond issue with a ninth mortgage The tribute to the standing of Seattle's electric utility and the revenue bond is evident

**Maturities of municipal bonds** The purpose for which municipal bonds are issued should govern, to some extent, their maturities Obviously, it is poor financing to issue 25- or 30-year bonds in order to provide funds to build a road whose maximum life is but five years The inevitable result of such a policy of loading up the city with long-term debts, incurred for dissipated assets, would be financial trouble The theory of municipal borrowing is based largely on the idea that improvements will add to the general value of taxable properties, or that the improvements obtained with the borrowed funds will be of benefit in subsequent years On this basis, it is proper that the cost of acquiring these improvements should be deferred until the added values in taxable properties have materialized, or that their cost should be passed on in part to those who enjoy the service later through borrowing operations To defer payments beyond the life of the improvements is, however, entirely illogical

Some states recognize the dangers that might result from lack of control over bond maturities, and prescribe the maximum length of time that municipal bonds may run Massachusetts has one of the most detailed laws in this respect The statutory provisions of this state limit municipal borrowing by restricting the purposes for which debts may be incurred, as well as their maturities Thus, cities and towns may incur debts, within specified limits, for the following purposes and payable within the time specified [19]

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[17] For a fuller statement of reasons for the use of revenue bonds, see *Moody's Manual of Investments, Governments and Municipals*, 1950, p a25 This source also supplies a list of issuers and some ratio material for analysis

[18] Sewerage projects costing as much as $8 billion are estimated as probable over the next few years The Federal Works Agency has approved plans for treatment plants and disposal systems for over 3,300 municipalities to cost approximately $1,125,000,000 Present legislation provides that not over one third of cost or $250,000, whichever is lower, may be borrowed from the Federal Government These loans may be subordinated to loans sold to the public *Investment Banking*, June 1949, pp 14, 15

| *Purpose* | *Maximum Years* |
|---|---|
| Airports | 10 |
| Bridges—stone, concrete, or iron | 20 |
| Cemetery lands | 10 |
| Electric or gas utilities | 20 |
| Emergency appropriations suitably approved | 2 |
| Equipment—departmental | 5 |
| Judgments, payment of | 1 |
| Land and public buildings | 20 |
| Loans, temporary | 1 |
| Park land | 30 |
| Relief—food and shelter | 2 |
| Roads—macadam | 5 |
| Roads—permanent, as stone or brick | 10 |
| Sewers and drainage | 30 |
| Sewers—connections with buildings | 5 |
| Sidewalks | 5 |
| Street railway properties | 10 |
| Walls and dikes on highways | 10 |
| Water works—land | 30 |
| Water works—buildings, etc | 20 |
| Water works—mains | 5–25 |

Other states set arbitrary limits on the time within which local bond issues must mature In New Hampshire local bond issues must mature within 20 years, except for water, electric and gas utilities, and sewerage systems, which may run 30 years Vermont has a similar 20-year limit except for municipal forests, which may run 60 years The limit in Pennsylvania, exclusive of Philadelphia, is 30 years, in West Virginia, 34 years, in Illinois, Wisconsin, and Missouri, with exceptions, 20 years, and in Oklahoma, 25 years In Colorado county bonds are permitted to run not less than 10 nor more than 20 years, and city and town bonds not more than 20 years

Formerly, the accumulation of sinking funds from annual revenues was required in order to provide sufficient cash to meet an issue of bonds when it became due There is, however, too much opportunity for mismanagement in the operation of these funds to make this a desirable method of meeting the situation A great many of the states now require the serial method of payment of local bond issues, and some states regard this requirement as a substitute for specific maturity limitations

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[19] Chapter 14, Sect 7 and 8, of the General Laws of Massachusetts (1948)

**Financial analysis of municipal bonds.** Up to this point, the discussion has centered on the general aspects of municipal financing rather than on the specific factors that make the bonds of various municipalities differ in safety and desirability In a broad way, it may be said that those economic factors that contribute to the wealth and growth of a local community contribute also to the financial strength of its bonds The amount of debt outstanding, in relation to resources and population, is also important The location of a municipality in respect to natural phenomena, such as floods, earthquakes, and tornadoes, must be considered Finally, the age of the municipality, its past debt history, and the character of its population are all matters that affect the credit of a given community

**Local industries.** The presence of diversified industries within the territorial limits of a local district has the same value to the district as was noted in our discussion of state bonds Diversified and growing industries, of course, provide a permanent and growing income for the community Another factor of importance is the location of the municipality in respect to transportation Cities like St Louis, Dallas, Kansas City, Omaha, and Des Moines are railroad centers, and hence they serve as distributing points for the surrounding country Even if there were no important industries in these cities, they would still have an element of stability because of their location as junction points for several important railroads In contrast to cities that enjoy varied industries or strategic locations are the one-industry communities, or communities whose principal industry is mining Akron, Ohio, for instance, is largely devoted to the production of rubber goods Fall River, Massachusetts, and Woonsocket, Rhode Island, are essentially textile communities Tulsa, Oklahoma, owes its wealth largely to the oil fields in its immediate vicinity The prolonged and severe depression in the Northern cotton industry has seriously affected property values in Woonsocket and Fall River A decline in Oklahoma oil production might conceivably result in a serious decline in property values around Tulsa Important information regarding the amount of capital invested, the character of the industries, and the value of the products of the leading industries in more important cities is available in the *Census of Manufactures,* published by the Bureau of the Census of the United States

Where a local district is situated close to a large city and serves primarily as a residential suburb, the presence of industry is not desired A large number of such communities are located in the vicinity of New York In fact, some towns as far as 30 miles from New York serve principally as residential areas for the metropolis Such towns are satellites of the metropolis and derive their general character from the economic character of the latter The type of people who make their residence in these communities will determine the wealth and standing of the particular town

**Ratio of net debt to assessed valuation** Although a general survey will indicate the permanency that may be expected in relation to values in a given case, it fails to give specific information in respect to the municipality's ability to meet promptly the principal and the interest on its debts A more detailed economic analysis is required The most obvious indication of a municipality's ability to pay lies in the ratio of net debt to the assessed value of the property within its area Such a ratio also makes possible a comparison of the status of different municipalities by the reduction of net debt to a common denominator

**Method of ascertaining net debt** Before making the actual computations necessary to arrive at this ratio, however, one must first define his terms For instance, what is meant by "net debt"? One would obviously be in error were he to use as a basis for computations the actual total debt of the municipality, for it often happens that sinking funds are held in the city's treasury against outstanding bonds It would be perfectly proper, therefore, to deduct sinking funds from total debt in order to ascertain net debt Let us consider, however, still another situation Suppose that City *A* operates its own water system, which was acquired at a cost of $2 million, the entire amount of which was secured by a bond issue Revenues from this system, however, adequately cover charges These bonds, accordingly, do not result in a charge on the taxpayer City *B*, on the other hand, does not own its water system, which is privately operated In order to put these two cities on a comparable basis, it is necessary to eliminate water debt from the former to arrive at net debt In the same way, it is usually considered good practice to eliminate all self-supporting debt to obtain the net figure

**Treatment of overlapping areas.** As contrasted with these deductions, however, are the possible additions due to overlapping districts In some states it is customary to create special school districts more or less coterminous with municipalities These school districts borrow for the purpose of erecting schools, thereby relieving the municipality of that burden, but the same property is assessed to meet this debt as that of the municipalities As already explained, it is proper to add all special district debts, or a pro-rata share of them, to the debt of the municipality The same applies to county and to state debt, which should be apportioned among the municipalities whenever local tax rates include the burden of such debts [20]

**Proper ratios of debt to assessed valuation.** Assuming that the proper methods for determining the net debt of a municipality have been established, the question now arises What should be the ratio of debt to the actual or adjusted assessed value of property?[21] This question cannot be answered precisely For one thing the size of the municipality will make some difference in the ratio Undoubtedly the larger the city, the more diversified its industries are likely to be, and the more likely it is that values will be stable Consequently, for large cities, a ratio of debt to assessed value that is higher than that for very small communities, whose main source of income lies in one local industry, may be accepted as conservative The Bureau of the Census divides cities having a population over 25,000 into six groups on the basis of size, and prepares a varying amount of statistics on debt and assessed values from year to year with fuller information for cities over 100,000 The following table gives the available data for the four largest groups for the years 1940 and 1948

ASSESSED VALUES AND NET DEBT FOR CITIES WITH POPULATION OVER 100,000 1940 AND 1948*

| | 1940 | | | 1948 | | |
|---|---|---|---|---|---|---|
| *Groups of Cities†* | *Assessed Valuations Subject to Tax (Millions of Dollars)* | *Net Debt at Close of Year*[a] *(Millions of Dollars)* | *Ratio of Net Debt to Assessed Valuation* | *Assessed Valuations Subject to Tax (Millions of Dollars)* | *Net Debt at Close of Year‡ (Millions of Dollars)* | *Ratio of Net Debt to Assessed Valuation* |
| I | 26,215 | 1,733 | 6 61% | 34,325 | 1,168 | 3 40% |
| II | 10,260 | 693 | 6 75 | 12,736 | 342 | 2 68 |
| III | 9,860 | 806 | 8 17 | 11,544 | 560 | 4 85 |
| IV | 9,285 | 613 | 6 60 | — | 393 | — |

* Bureau of Census, *Financial Statistics of Cities over 10,000 Population, 1940*, and *Compendium of City Government Finances in 1948*

[a] Net bonded debt of city corporation and overlying units of local governments except counties in the case of cities under 300,000

† Group I, population over 1,000,000, Group II, 500,000–1,000,000, Group III, 250,000–500,000, Group IV, 100,000–250,000

‡ Total general net long-term debt

One would expect a gradual reduction in the ratio of debt to assessed value from the large to the small municipality but in recent years a clearcut relation has been lacking The logic of this tendency has already been discussed The much greater growth of suburban cities has required a much larger investment in facilities in the postwar years than for the more settled central cities Furthermore, the violent changes in the price level since 1930 make the usefulness of these averages of doubtful utility as "standards"

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[20] See p 579, for an illustration of this procedure

[21] Note that we say "actual or adjusted assessed value" Where a city assesses property at less than its real value, the assessed value should be revised as nearly as possible to 100 per cent

Statistics that gave true values of taxable property and the total overlapping debt would be more satisfactory in presenting an accurate picture of affairs If all overlapping debt has been allocated to the municipality under consideration, one is probably justified in saying that a 10 to 11 per cent ratio of net debt to the true assessed value figure would be conservative for a city with a population of 500,000 or over It may be argued that a 10 or 11 per cent ratio is so low that no question could ever be raised concerning the security behind the bonds However, such a ratio might be regarded as a fair maximum for total debt if the true value of property were used as the base instead of the frequently understated assessed valuations A rationale for a 10 to 12½ per cent maximum might be worked out somewhat as follows

1 The maximum tax levy on real estate, the basis of most of the general property tax, should not exceed 2 per cent

2 Not more than one half of this levy, or one per cent, should be required for debt service

3 If it is assumed that one half of the debt service is for interest and one half for principal retirement, then one half of one per cent might be used for each The one half of one per cent used for interest would carry a sum 20 times as large—that is, an amount equal to 10 per cent of the taxable property—if the bonds paid five per cent With a four per cent rate of interest, a given amount of money would carry a bond issue 25 times as great, or in this instance 12½ per cent of taxable property (One may, if he chooses, adjust this ratio upward to allow for lower interest rates in particular cases Some communities have borrowed for less than two per cent interest in recent years ) If a similar line of reasoning is applied to the principal retirement portion it will be seen that, if an amount equal to the initial interest requirement is used to pay off bonds, the debt amortization of 5 per cent a year would wipe out the debt in 20 years

Opinions will vary as to what is a fair maximum tax rate, how much of the tax levy can be reasonably devoted to debt service, and what are likely bond interest rates and suitable average periods for debt retirement However, this hypothetical approach shows a method of studying the problem of municipal debt analysis that gets at the fundamental relation—that of debt charges to debt-paying ability Although an increasing number of major cities have come to rely upon other taxes, notably the sales tax, such revenues often represent a corresponding expansion of municipal services rather than increased debt-paying ability The conservative course would be to continue to relate long-term debt to the basic property tax

As net debt increases over 10 or 12 per cent of taxable values, the tax rate must be correspondingly raised to meet debt service This situation discourages industry and may even lead it to seek less heavily taxed locations Furthermore, the reluctance of a municipality to levy burdensome taxes has in the past furnished the impelling motive for repudiation with or without reliance on technical grounds of invalidity or illegality of issue Where debts are within conservative limits, therefore, the occasion for default is lacking

In the case of the small municipality, it is justifiable to take a somewhat smaller ratio as conservative Just where the dividing line between large and small municipalities should be drawn is a matter of judgment One may logically make only a slight distinction between cities of 100,000 population and up But when one considers municipalities with a population of 50,000 or under, much greater attention should be paid to the ratio of debt to assessed valuation Thus, in establishing theoretically conservative ratios, one would probably set maximum limits for cities in Groups III, IV, and V which would be only a little lower than those for Groups I and II, but in respect to cities in Group VI, and particularly in respect to cities and towns with a population of under 25,000, a decided lowering of the limits is desirable A 6 per cent ratio may be set for cities coming in Group VI, and, for smaller localities, particularly where population is under 10,000, the limits should probably be lowered gradually to 5 or 4 per cent (Groups V and VI, not shown in the preceding table because of a lack of data, include cities of 50,000–100,000 and 25,000–50,000 population, respectively )

Theoretical limits of this nature are merely rough guides, however, and therefore the special factors that are often present to alter the situation should not be overlooked Compare, for example, a town with a population of 3,000, located in a mining district, with a town of equal population, situated close to a large city of the best type. Undoubtedly, to allow for the greater stability in values found in the latter town, one should insist on a much lower ratio for the first town than for this one. A study of recent defaults in municipal bonds will show that they have occurred almost entirely among special assessment issues or among issues of small localities lacking diversification. On the other hand, with the rough limits that have been set up as a guide, the investor, in an effort to test the reasonableness of a municipality's debt ratio, is in a position to compare its relative debt with a wide range of other factors, including type and diversification of industry, character of the population, age of the community, its location, its nearness to other municipalities, its legal control over borrowing operations, and its liability to widespread damage from natural phenomena.

**Per capita debt.** Another test that supplements to some extent the ratio of net debt to assessed values involves a determination of the net debt per capita of the municipality. The possible errors that may arise in the process of assessment, and the avowed policy in some states of allowing assessments at rates substantially below the actual value of the property, make it advisable to find a means of checking the ratio of debt to assessed value. Frequently the percentage of underassessment for individual cities can be learned and an adjustment made, but the per capita debt figure provides a simpler ratio. Despite the fact that the actual per capita wealth of communities varies rather widely, per capita debt figures do indicate to some extent the ability of a municipality to discharge its obligations. Even after allowance is made for the rather wide differences that exist in the per capita wealth of communities, a per capita debt of $350 for a municipality of, say, 100,000 population would appear high. On the other hand, a per capita debt of $50 would appear very conservative. Allowance for changes in the price level must be made in using such figures. The postwar inflation of the late 1940's reduced the burden of debts just as the deflation of the early 1930's made it heavy.

Even making allowances, what can be regarded as normal? One comes to the conclusion that the larger the city or the municipality, the larger the per capita debt may be without its placing an undue financial burden on the community. The reasons for this conclusion have already been discussed in part. An additional factor must be explained, however: the fact that wealth is concentrated in large cities, thus resulting in larger wealth per capita in such localities. Theoretically, this factor does not enter into the situation in a discussion of the ratio of debt to assessed valuation, for the variable unit, wealth, has been used as the denominator. Actually, however, much of the wealth that is concentrated in larger communities is intangible, that is, it is in the form of stocks, bonds, and other evidences of wealth that are not easily assessed Hence one may even conclude that actual wealth increases more rapidly than assessed values as the size of the municipality increases

Some evidence of desirable limits for per capita debt are found in the statistics of municipal debt In general, a city is expected to keep step with similarly situated communities Both the direct and over-all net debt of cities are given on a per capita basis by population groups in the accompanying table The last four columns show ratios of net debt to estimated full value of taxable property Only the median ratios are given for the direct debt burden but the high and low ratios, which reflect the extreme range of the ratios, are shown for the more significant over-all ratios, which include overlapping debt

RANGE OF DIRECT AND OVER ALL NET DEBTS 1949

200 Largest Cities, 75 Major Metropolitan Counties

| | Net Debt per Capita | | | | Ratio to Estimated Full Value | | | |
|---|---|---|---|---|---|---|---|---|
| *Population Group* | *Direct Median* | *Low* | *Over all Median* | *High* | *Direct Median* | *Low* | *Over all Median* | *High* |
| Over 500,000 | $71 45 | $28 00 | $102 48 | $211 31 | 4 4 | 1 1 | 5 6 | 10 4 |
| 250,000 to 500,000 | 63 84 | 42 73 | 108 65 | 252 93 | 3 9 | 2 4 | 6 0 | 10 7 |
| 100,000 to 250,000 | 38 45 | 5 78 | 55 95 | 201 55 | 2 0 | 0 2 | 3 7 | 12 2 |
| 50,000 to 100,000 | 34 07 | 6 11 | 69 28 | 417 83 | 2 1 | 0 2 | 4 1 | 26 6 |
| 200 Largest cities | 44 89 | 5 78 | 75 54 | 417 83 | 2 5 | 0 2 | 4 4 | 26 6 |
| 75 Major metropolitan counties | 9 33 | 13 95 | 71 77 | 331 32 | 0 7 | 1 3 | 4 7 | 12 6 |

Source These figures were prepared by the Municipal Service Department of Dun & Bradstreet, Inc , New York, for the convenience of those utilizing their Municipal Credit Surveys for 1950

Such data must be read against the background of current influences and the situation of the individual city In the late 1940's municipal debt was growing to make up for a lack of improvements and financing during the depression of the 1930's and the period of ban on construction during the war years After the war, some cities were faced with unusual population and need for additional facilities as for school buildings With a higher price level, and so higher construction costs, resultant debt would be expected to be correspondingly high In the light of the continued needs of a growing population and a higher price level, higher per capita debt figures might well be expected The net per capita debt figures for cities of various sizes in the years 1925 and 1930 at a time when prices were considerably lower and conditions were prosperous would point in that direction

NET PER CAPITA DEBT FOR CITIES
OF OVER 30,000 POPULATION 1925, 1930

| *Population Group* | *1925* | *1930* |
|---|---|---|
| 500,000 and over | $147 86 | $185 88 |
| 300,000 to 500,000 | 116 61 | 148 32 |
| 100,000 to 300,000 | 91 77 | 114 42 |
| 50,000 to 100,000 | 74 72 | 96 86 |
| 30,000 to 50,000 | 61 34 | 91 30 |

Source Bureau of Census, *Financial Statistics of Cities*, 1925, 1930

In view of the varying burden of a given per capita debt with changes in the price level, it is suggested that the investor in this field note the amount of debt a given city is assuming relative to similarly situated municipalities and also compare such figures with those of the past, making allowance for the changing price level The city with a moderate debt will be in the stronger position to bear unfavorable business conditions or a deflationary price level

**Municipal tax rate** Another test of the financial operations of a municipality is found in the tax rate applied to the value of property within the area A total tax rate between $20 and $35 per thousand of corrected assessed values may be considered as reasonable, a higher rate should require an explanation It will be found that a rate of $30 or over places a burden on the property owner that reacts unfavorably on the community. Industry is burdened either directly by the high tax rate or indirectly through the higher rents that must be paid.

**Delinquent tax collections.** Ordinarily the power to tax is so potent that no question arises as to the certainty of collection The bulk of local taxes is levied upon real estate, and failure to pay means the seizure of the property by the community, and its subsequent sale When, however, business depression fastens itself upon a locality, inability to pay may result in delinquency The shrinkage of municipal revenues may prove embarrassing and produce defaults It was for this reason that in the years immediately following 1930, municipal security investors carefully scrutinized the reports of the percentage of taxes collected Some communities pursued an extremely conservative policy, and by strict economy succeeded in living within, or nearly within, their reduced cash income Others incurred debt that had to be retired when back taxes were collected Still others, either unable or unwilling to economize, and without ability to borrow, were obliged to default Undoubtedly the figures for tax collections during a period of business depression afford a valuable index of municipal financial stability In some states the machinery for enforcing the collection of delinquent taxes is defective

**Municipal defaults during depression.** Because extreme stress provides a test of investments, the following summary is a valuable and concise picture of the extent of municipal defaults under the most adverse conditions [22]

> The outstanding facts with respect to State and Municipal debt defaults are these
>
> 1 No State government is in default
>
> 2 Counties, municipalities and special districts in default number approximately 2,600 and their aggregate indebtedness represents about 10% of the total indebtedness of all States, municipalities and other special districts
>
> 3 Few municipalities in the default classification have failed to pay interest, and unpaid principal actually past due represents only a fraction of the total indebtedness It has been estimated that the actual amount of past-due principal and interest only slightly exceeds 1% of the total State and municipal debt of the country
>
> 4 The depression in municipal finance appears to have touched bottom some months ago when one State and 37 cities of 30,000 or more population were in the default column These communities together with eight coterminous school districts which were also in default, accounted for about 38% of the gross debt of all cities and school districts in that population group As of this date, we find that 14 of these cities have met all past-due payments or have worked out a readjustment plan acceptable to a large majority of their creditors The total debts of the remaining 23 cities and the eight school districts is only 5% of the aggregate debt of all cities in the group
>
> 5 As of November 1, 1934, a summary shows 2,654 counties, municipalities and other taxing districts in 40 States to be in default Of this number, 1,992 were counties, municipalities and districts in default on general obligation bonds and 662 were drainage, irrigation and other special assessment districts Eliminating these 662 special assessment district defaults as representing a special problem which is not strictly speaking a municipal debt problem, it appears that about one-half of the 1,992 municipal corporations in the default classification are extremely small places and represent a relatively insignificant part of the total debt of all defaulting municipalities With a view to simplifying the picture, we have listed by States, the 1,067 municipalities in default having a population of 5,000 or more and find that they are scattered through 37 States

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[22] A memorandum presented to the 40th annual meeting of the National Municipal League at Pittsburgh, Pa , November 26, 1934, by Shanks, Sanders, Jr (Editor), *The Daily Bond Buyer,* December 1, 1934, p 2850

6 A breakdown of these 1,067 defaults by States indicates that the default situation presents a serious problem in the following States where defaulting municipalities number 50 or more Florida, Louisiana, Michigan, New Jersey, North Carolina, Ohio and Texas In a few other States, while the number of reported defaults is not large (from 10 to 50), the situation is sufficiently serious to affect adversely the credit of the States and their municipalities and to indicate some fundamental weaknesses in public credit In this group are Alabama, Arkansas, Kentucky, Mississippi, Oklahoma, South Carolina and Tennessee There are 14 States in these two groups so that in the remaining 34 States there are either no defaults or the problem appears to be that of a comparatively few individual municipalities, rather than one of Statewide importance

7 Recently an attempt was made to ascertain the gross debts of all municipalities of 5,000 or more population on the default list and a figure of roughly $2,225,000,000 was arrived at Of this debt, $1,899,436,474 is accounted for by defaults in the 14 States named above as representing the areas in which the default situation is serious

| *Group 1* | | | *Group 2* | | |
|---|---|---|---|---|---|
| ( 9)* | Florida | $ 303,137,887 | ( 6) | Alabama | $ 35,037,100 |
| ( 1) | Louisiana | 85,426,650 | ( 1) | Arkansas | 159,156,180 |
| (21) | Michigan | 487,445,513 | ( 2) | Kentucky | 13,558,500 |
| (18) | New Jersey | 209,138,135 | ( 4) | Mississippi | 23,694,415 |
| (10) | North Carolina | 151,123,576 | — | Oklahoma | 8,074,824 |
| (24) | Ohio | 235,159,785 | ( 2) | South Carolina | 17,540,632 |
| ( 5) | Texas | 110,240,259 | ( 2) | Tennessee | 60,703,019 |
| (88) | | $1,581,671,805 | (17) | | $317,764,670 |

* Figures in parentheses represent number of cities of 10,000 or more population in default

8 Referring again to the defaulting cities in the 30,000 or more population group, it is interesting to find that 25 of the 37 cities are located in the first group of seven States where the default situation has been the most serious, whereas only seven of these cities are in the second group of States just mentioned, the remaining five cities are located in States where no general condition of default exists

9 In the case of several of the larger cities which must still be considered as being in default, rapid progress is being made in restoring the bonds of these communities to a completely current basis

In connection with municipal debt difficulties, it is interesting to note that in 1934 the Federal Government passed a municipal debt adjustment law, designed to permit financially troubled municipalities to work out a readjustment with creditors, somewhat after the manner of private corporations In 1936 this law was held unconstitutional but was replaced by a similar act in 1937, subsequently sustained by the Supreme Court This legislation was designed to compel minority dissenters to accept an equitable plan that had won the approval of the municipality and a majority of the creditors In most instances the municipality has preferred to work out a settlement without the formal aid of this law in order to minimize any loss of credit standing The law is most useful in preventing obstruction by minority bondholders [28]

**Explanation of municipal analysis card** Up to this point, the more important financial factors to be analyzed in a study of the obligations of municipalities have been considered In order to provide a convenient method for making the necessary computations and presenting the preceding data on a comparable basis, a "municipal analysis card," illustrated in Figure 19, has been devised along the lines indicated in the paragraphs following

The first section of the card is devoted to matters of general interest, such as the following the county and the state in which the municipality is located, its date of incorporation, the type of corporation, whether it is a city, town, borough, or school district, the character of its population—whether predominantly white, or part white and part Negro, its past debt history, the debt limits established for the municipality, whether or not the district is subject to disastrous natural phenomena, and the nature of essential industries within the district In this way a general picture of the municipality is given The second section provides for a record of the actual debt, according to the purposes for which it was issued The headings in this section require no discussion Additional space is left for listing debt that cannot be classified under the printed captions, such as temporary certificates, assessment debt, and the like The aggregate of these debts will constitute the total direct obligations of the municipality To this direct debt must be added the city's share of any special district debt, of the county debt, and also of the state debt The most practical basis for apportioning this overlapping debt is to ascertain (*a*) the assessed valuation of city property, (*b*) the assessed valuation of property given for each overlapping district, and (*c*) the net debt of each overlapping district, county, and state Assuming, now, that we are dealing with districts that include the entire municipality as well as additional area, we next find the

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[28] A fuller discussion, with useful sidelights on the practice of municipal debt readjustments and the legal problems involved, may be found in Lehmann, Henry W , "The Federal Municipal Bankruptcy Act," *Journal of Finance* V 241–256 (September, 1950)

## Figure 19—Municipal Analysis Card*

ISSUING CORPORATION New Haven COUNTY New Haven STATE Connecticut Second city of state in manufactures INCORPORATED 1784 CHARACTER OF CORPORATION Municipality DEBT LIMIT 5% TAX LIMITS None POPULATION, 1947 175,000 CHARACTER OF POPULATION White SUBJECT TO NATURAL PHENOMENA No PAST DEBT HISTORY Clear INDUSTRIES Firearms, cartons, hardware, and electrical goods VALUE OF PRODUCTS, 1939 $100,838,000 NUMBER OF ESTABLISHMENTS 404

| DIRECT OBLIGATIONS (End of Year) | 1930 | 1940 | 1947 | 1948 | | |
|---|---|---|---|---|---|---|
| 1 School Bonds | $ 522,000 | $ 284,000 | $ 106,000 | $ 37,000 | | |
| 2 Water Bonds | | | | | | |
| 3 Street Road or Paving | 3,859,000 | 1,193,000 | 311,000 | 262,000 | | |
| 4 Gas and Electric Light | | | | | | |
| 5 Building, Improvement and Parks | 8,664,000 | 7,432,000 | 6,354,000 | 7,459,000 | | |
| 6 Miscellaneous—Funding | 103,000 | 1,200,000 | 152,000 | | | |
| 7 Miscellaneous—Sewer | 2,335,000 | 2,490,000 | 1,300,000 | 1,020,000 | | |
| 8 Miscellaneous—Library, Hospital etc | 135,000 | 77,000 | 70,000 | 69,000 | | |
| 9 Miscellaneous—Fire and Police | 293,000 | 183,000 | 121,000 | 115,000 | | |
| 10 Miscellaneous—Tax and Notes | 2,574,000 | | | | | |
| 11 TOTAL DIRECT OBLIGATIONS | 18,485,000 | 12,859,000 | 8,414,000 | 8,962,000 | | |
| 12 District Debt Apportioned to City | | | | | | |
| 13 County Debt | | | | | | |
| 14 State Debt—Net | 1,964,218 | [a] | [a] | [a] | | |
| 15 Special Debt | | | | | | |
| 16 Other | | | | | | |
| 17 TOTAL GROSS MUNICIPAL DEBT | 20,449,218 | 12,859,000 | 8,414,000 | 8,962,000 | | |
| 18 LESS DEDUCTIONS WATER DEBT AND SINKING FUND | 1,027,739 | 570,629 | 135,013 | 377,248 | | |
| 19 NET MUNICIPAL DEBT | 19,421,479 | 12,288,371 | 8,278,987 | 8,584,752 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 20 Total Assessed Valuation | 338,040,530 | 364,521,238 | 393,817,488 | 405 287,787 | | |
| 21 Assessed Valuation of Real Estate | | | | | | |
| 22 Rate of Assessment | 100% | 100% | 100% | 100% | | |
| 23 Tax Levy | 7,808,326 | 8,741,186 | 9,764,171 | 9,989,397 | | |
| 24 Per Cent of Taxes Collected at End of Year | 91 1% | 95 3% | 98 08% | 97 91% | | |
| 25 Ratio—Net Debt to Assessed Valuation—Uncorrected | 5 74% | 3 37% | 2 10% | 2 12% | | |
| 26 Ratio—Net Debt to Assessed Valuation—Corrected | | | | | | |
| 27 Population | 162,660 | 160,605 | 175,000 | 175,000 | | |
| 28 Net Debt per Capita | 119 39 | 76 51 | 47 31 | 49 06 | | |
| 29 Tax Rate (per $1000)—Uncorrected | 25 50 | 28.50 | 30 75 | 30 50 | | |
| 30 Tax Rate (per $1000)—Corrected | 25 50 | | | | | |
| 31 General Municipal Rating | | | | | | |
| 32 Rating by | | | | | | |
| 33 Rating by | | | | | | |
| 34 Average Yield of Bonds | | | | | | |

(a) State debt not supported by local taxes
* Compiled from *Moody's Manual of Investments, Government Securities*

proportion of (*b*), the assessed property values in the larger area, that is found in (*a*), the city or town itself This ratio (which would be $\frac{a}{b}$) is applied to (*c*), the net debt of the larger area, and the result $\left(c \times \frac{a}{b}\right)$ is considered the debt to be apportioned to the city proper for each overlapping district Where the special district constitutes an area coterminous with the municipality, or where it is wholly within the boundaries of the municipality, its entire net debt should be added to the total direct obligations thereof On the other hand, where the area of the special district covers only a part of the municipality and extends beyond it, a difficult situation is created, in that it is often impossible to ascertain exactly what portion of the district actually belongs to the municipality Situations of the latter nature, however, are rare Generally the municipality lies entirely within the area of a larger district, except in the case of school or sanitary districts, which are sometimes coterminous with the municipality or are found entirely within the latter's boundaries Sometimes the debt of a major overlapping area, such as the state debt in the example of New Haven in the later years, is not supported by local property taxation and is then excluded

The total of direct obligations plus the apportioned district, county, state, and special debt constitutes the total gross debt of the municipality From this must be deducted sinking funds and self-supporting debt, for reasons already given The net debt so obtained will indicate rather more accurately than the "net city debt proper" the actual extent to which the property within a given area has been "pledged," so to speak, for the payment of debt service It is this figure, therefore, that we shall refer to as the municipality's net debt

The final section of the card provides for recording the assessed valuation of the property subject to tax, the basis of assessment, the ratio of debt to assessed valuation, the population, the per capita debt, and the tax rate Subsequent sections are reserved for entering not only a general municipal rating but also a rating on special issues A system may be worked out whereby municipalities may be rated for investment purposes The first step is to consider a perfect situation that would rate as 100 per cent This basis would presuppose a municipality with a clear record of debt payment for the past 30 years, with no outside hazard such as threatens San Francisco, Galveston, lower Florida municipalities, or Mississippi basin districts, with satisfactory debt limits, and with reasonably varied industries It would further presuppose that the ratio of net debt to assessed valuation, per capita debt, and tax rate come within the limits prescribed as conservative To allow for variations from these ideal conditions, certain deductions are made Little advantage is gained at this time from devising a rigid set of deductions, for the entire matter is obviously one of judgment The chief advantage of such a plan is the fact that, whatever system of penalties is used, municipalities will be rated in order of preference It will further appear that the yields at which the bonds of various cities sell do not always register their credit position In other words, it is often possible to select bonds with a yield of from one eighth to one quarter of one per cent higher than actually appears warranted by the relative risk present Furthermore, by making the preceding analysis annually for the bonds he holds, the investor is able to purchase bonds of second-grade municipalities with small risk of loss The debt situation can be constantly watched, and any undue extension of credit can be detected in time to enable the investor to dispose of his holdings

**Municipal bonds, tax exemption, and yields.** Municipal bonds are exempt from all Federal taxes except estate and gift taxes, and may or may not be exempt from local taxes In Pennsylvania, New York, Connecticut, and Massachusetts, among other states, their own municipal bonds are exempt from certain local as well as Federal taxes Because of this exemption, the municipal bonds of these states have a better local market, and consequently they usually sell somewhat higher than so-called "general market" municipals of the same grade The exemption that municipals enjoy from Federal taxes, as well as their inherent safety as a class, causes them to sell at yields lower than those at which high-grade corporation bonds sell The exemption from the Federal income tax is stipulated in the Revenue Act and formerly was felt to be a matter of constitutional immunity as well However, since the Supreme Court upheld the right of the Federal Government to tax wages and salaries paid by states and municipalities to employees, the matter of tax immunity would appear to rest solely with Congress The Public Salary Act of 1939 made such salary payments ordinary taxable income Some believe that Congress would only tax the interest from subsequently issued bonds if it decided to make municipal bond interest taxable income but in view of the clear legal precedent, the feature should be regarded as a speculation Some issuers have even entered a disclaimer as to any representations about the tax immunity of their bonds and others merely quote the present opinion of legal counsel

Three factors caused municipal prices to rise and yields to fall to an unprecedented extent after 1940 (1) income taxes rose sharply, (2) the Federal Government ceased to offer exempt issues, and (3) the onset of the war caused a cessation of new municipal financing because of difficulties in obtaining materials and labor Municipal yields reached a low of 1 37 per cent (Dow-Jones average) in 1946, so that high grade corporate bonds were yielding 84 per cent more [24] With the resumption of state and municipal financing after 1945, yields rose rapidly so that the yield cost of tax exemption to the investor declined greatly Should the supply of municipals become sufficient, yields might be forced up to the point necessary to make these bonds attractive to financial institutions, such as life insurance companies, who derive almost no benefit from the exemption Even so, the best state and municipal bonds would probably sell to yield somewhat less than corporate obligations because of their unusually excellent record Until yields become attractive to institutional buyers, the most logical buyers are individuals subject to high income tax rates in the case of long maturities, short maturities of good quality will attract commercial banks who save on exemption from the corporation income tax

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[24] A discussion and graphic presentation of the subject is found in "Changing Value of Tax Exemption versus Municipal Bond Prices," by Warren Browne, in the *Commercial and Financial Chronicle* 168 797 (August 26, 1948) For cases dealing with tax immunity of salaries of municipal employees, see *Helvering* v *Gerhardt* (304 U S 405) and *Graves* v *New York ex rel O'Keefe* (306 U S 466)

# 21

# Foreign Investments

**Classification of foreign investments according to issuing unit.** In the field of foreign investments, many of the same distinctions are found as among domestic investments, but there are some that are peculiar to the former field The chief bases of classification of foreign investments are

1. Type of security—as bonds, preferred and common stocks
2. Class of issuer—civil, and corporation
3 Currency—whether payable in the currency of the United States, in that of a foreign country, or in two or more currencies at the option of the bondholder This last type of bond, known as a "multiple currency bond," has the advantage of being payable in the bondholder's own currency, but permits him to elect payment in another currency if it becomes advantageous for him to do so [1]
4 Direct or portfolio investments The term "direct" is used here in a special sense to denote those investments made by American corporations in foreign properties, either directly or more often through foreign subsidiaries Portfolio investments represent the securities of foreign governments and corporations that are held by American investors

The discussion in this chapter will be concerned primarily with portfolio investments that are directly available to the investment public Of these the bulk have been civil obligations—that is, government bonds—which have been generally payable in the currency of the United States The study of portfolio investments helps one to appreciate some of the problems of American corporations which have substantial foreign holdings

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[1] Thus, a number of the bond issues of the Canadian government are payable at the option of the investor in Canadian or United States dollars, Canadian dollars or English pounds sterling, or in any of the three currencies

**Foreign civil obligations** For many years civil obligations have been the main type of foreign security traded in in this country. Only since 1925 have the securities of privately owned foreign corporations been bought to any extent by American investors

A further classification of foreign government securities is possible The obligor may be a central government, such as the Dominion of Canada, or the United Kingdom, or the issuing unit may be some political subdivision of a state Thus, in Canada, one finds not only bonds issued by the Dominion government, but civil obligations issued by the various provinces, such as bonds of the Provinces of New Brunswick, Ontario, and Alberta Bonds are also issued by individual municipalities, such as Ottawa, St John, and Montreal This same situation applies in the case of the civil obligations of a number of other countries

**Foreign corporate securities** The corporate or joint stock form of business undertaking is prevalent in many of the more developed countries of the world Accordingly, there are organizations engaged in various lines of manufacture and mining; in the furnishing of steamship, railroad, or public utility services, and in the banking, insurance, or investment fields A considerable number of foreign corporate issues from Europe, South America, and the Orient were floated in the United States in 1929 and 1930 The names of some foreign corporations whose stocks are now listed on American stock exchanges and widely held will give an idea of the diversity of such interests currently Benguet Consolidated Mining Co (Philippine Islands), Brazilian Traction, Light & Power Co Ltd , Canadian Pacific Railway Co , Creole Petroleum Corp (Venezuela), Industria Electrica de Mexico, S A , International Nickel Co of Canada, Ltd , International Railways of Central America, Roan Antelope Copper Mines, Ltd (Rhodesia), American and Foreign Power Company Many other major corporations, such as Armour & Co , International Harvester Co , Loew's, Inc , Singer Manufacturing Co , Standard Oil Co of New Jersey, Standard Oil Co of California, and Texas Co have important foreign assets

The financial analysis of the foreign corporation, as well as a study of its management, characteristics, and products, should be made along lines similar to those prescribed for domestic corporations The difference between the two types of securities arises from the fact that the foreign corporate issue suffers or benefits from the political and the economic status of the country in which it is situated, whereas, in making our analysis of domestic securities, we regard this phase of the question as a *constant* Two other problems are the rate at which foreign values shall be translated into dollar figures and the extent to which foreign countries will permit their monies to be converted into dollars to pay interest and dividends to American investors

Prior to World War I almost all countries were on a gold standard As a result, rates of exchange between countries varied but slightly, and there was little likelihood of either loss or gain through a change in the value of a foreign bond as a result of fluctuation in the value of foreign currency The strains of war conditions upon monetary systems and international trade broke down these stable relations, and exchange rates became chaotic The money of important countries, like Germany and Russia, became worthless, and a new system had to be employed In other countries, like France and Italy, a return to the gold standard and stable exchange rates was effected by re-establishing the money unit with a greatly reduced gold content Some countries, like Great Britain, were able to return to the old monetary basis The United States came to enjoy a marked financial prestige because of her retention of the gold standard throughout this period As other countries gradually returned to a gold basis during the 1920's, the hope of a renewal of the former stability in exchange rates grew

These hopes were dashed when, after 1929, the world-wide depression produced financial strains that upset trade and money everywhere In 1933, the United States, while still possessing huge gold reserves, left the gold standard, and when the return was effected, it was done under rules that permitted further alterations in the gold content of the dollar

World War II brought a similar train of disrupted currencies To bring about more stable exchange rates for monies and so to aid the revival of world trade, the International Monetary Fund was created [2] Each country contributed a portion of the capital, the United States by far the largest sum. The Fund makes loans to enable the member countries to maintain exchange rate stability Equally important is the educational force of membership for economic policies, which will make the continuance of fixed exchange rates possible Changes in the rates will be made from time to time, although the effort of the Fund management are directed to minimizing such changes The risk of depreciation in an investment payable in the currency of another country still exists, but appreciation is also a possibility Bonds payable in dollars would, of course, be unaffected by fluctuations in the exchange of the debtor country except indirectly as such variations affected the ability of the debtor country to meet its fixed dollar obligations[3]

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[2] See annual reports of the Fund for the story of its work and problems

**Early position of United States in international finance** Prior to World War I the United States did not play a prominent part in international finance, for several reasons In the first place, investment opportunities in the domestic market were sufficient to absorb a very large share of our available capital The rapid industrial growth that took place in this country during the latter part of the nineteenth and the first part of the twentieth centuries was responsible for this situation In fact, far from having funds available for investment abroad, there were large amounts of foreign capital invested in the United States A survey of American history during the nineteenth century shows that we were a debtor nation until the outbreak of the first World War In 1843 a committee of the House of Representatives estimated the amount of state and city debt held outside the United States at $150 million[4] In 1853 the amount of foreign capital invested here was estimated by the Secretary of the Treasury at $222 million,[5] by 1860, the amount had risen to approximately $400 million The Civil War, however, resulted in the resale of a substantial amount of railroad and other securities in the domestic market

It is estimated that in 1873, when the panic occurred, foreigners owned American securities to the amount of $1 5 billion In 1880, this amount had increased to $2 billion, of which about $1 535 million represented investment in American railway securities[6] At the close of the nineteenth century the amount invested by foreigners in this country was approximately $3 3 billion,[7] and at the close of 1913, between $4 billion and $5 billion[8] On the other side of the ledger, Americans were holding foreign securities in the amount of about $2 6 billion,[9] leaving the balance of debt of this country to foreigners between $1 5 billion and $2 5 billion

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[3] An exception was found in the case of a few countries, like France, which chose to honor the gold clause in their dollar bonds after the United States left the gold standard As a result, their bonds appreciated very considerably when the United States left the gold standard in 1933 and more than the face amount of the interest coupons was paid Thus, the Republic of France 25 Year Sinking Fund External 7 per cent Gold Loan of 1924, due 1949, showed the following annual price range

| | *1930* | *1931* | *1932* | *1933* | *1934* |
|---|---|---|---|---|---|
| Low | 112⅛ | 108¾ | 108⅞ | 112½ | 160 |
| High | 121 | 121⅞ | 121 | 173 | 189 |

[4] House Report 296, 27th Cong, 3d sess, March 2, 1843, pp 3, 7

[5] Sen Exec Doc 42, 33d Cong, 1st sess, March 2, 1854, p 2

[6] *Publications,* U S National Monetary Commission, 1911–1912, Vol 20, p 173

[7] *Yale Review,* Vol 9, pp 265–285

[8] *Economic World,* New Series Volume 24, p 413

[9] Fisk, H E, *The Inter-Ally Debts* (New York Bankers Trust Co, 1924), p. 306

Another reason that explains in part our lack of interest in foreign investments prior to the first World War is to be found in our foreign trade relations At no time in its comparatively brief history has this nation been dependent on foreign markets as an outlet for manufactured goods We did not have the commercial interests abroad that either Germany or England had prior to 1914, and it was not necessary for us, therefore, to advance capital for the purpose of stimulating trade There was consistently an excess of merchandise exports over merchandise imports, but this excess was offset by payment for such invisible items as interest on loans held by foreigners, payments for banking and insurance services, tourists' expenditures, and remittances abroad by immigrants In short, our prewar position was that of a young country, borrowing from abroad to further our industrial development and paying for the capital by an excess of merchandise exports, which consisted largely of farm products

**Effect of war on America's financial position (1914 to 1919)** The emergency created by World War I made it necessary for European belligerent nations to use a large part of their capital surplus for military purposes, and thus cut off the source from which undeveloped countries outside the war area had been accustomed to borrow Furthermore, the belligerents themselves, particularly the allied countries, purchased heavily in the American markets both before and after our own entrance into the war in 1917 England, France, and Belgium relied heavily on America throughout the conflict for all sorts of supplies and services

Four ways for financing these war purchases were open to European nations Payments might have been made with gold or with other goods Up to a certain point gold was used as a means of paying for war purchases The amount of gold exported to this country as a partial means of offsetting adverse trade balances for the period from June 30, 1914, to December 31, 1919, inclusive, was as follows

NET IMPORTS OF GOLD INTO UNITED STATES*

(Thousands of Dollars)

| *Period* | *Amount* |
|---|---|
| June 30, 1914, to Dec 31, 1915 | 308,532 |
| 1916 (calendar year) | 530,197 |
| 1917 (calendar year) | 180,570 |
| 1918 (calendar year) | 20,973 |
| 1919 (calendar year) | *291,651*† |

* *Statistical Abstract of the United States*, 1925, p 487
† Excess of exports

The use of gold as a means of meeting continuously adverse trade balances, however, was limited to the amount of gold that could be spared by the banking systems of the belligerent countries. The second possibility, an attempt by European countries to increase the export of merchandise to us at a time when all energies were being directed toward the production of war supplies, would have been impractical.

Another method involved the resale, on a large scale, of domestic securities in American markets; it is estimated that between 1914 and 1919 the value of returned securities amounted to about $2 billion.[10]

The fourth, and most widely used, method of financing war purchases in this country was by means of loans floated here. It is estimated that up to 1919 total loans placed in the United States amounted to very nearly $9 billion. This sum was made up as follows:[11]

| | |
|---|---|
| Private Loans Floated in United States | $1,520,100,000 |
| Direct Loans of United States Government to European Governments | 7,319,500,000 |

**Aftereffects of the war.** The effects of the war did not end with the declaration of peace. All the belligerent nations of Europe were impoverished. There was a pronounced lack of capital goods with which to re-establish industries on a peace-time basis. Devastated regions had to be restored. Currencies required stabilization. In short, the rehabilitation process required large amounts of capital. At the same time, South America, Japan, and other countries that previously had looked to Europe for capital, now had to seek new sources of supply in the absence of a capital surplus in the markets of Europe.

The only nation in a position to meet these enormous demands was the United States. The great productive machinery of this country after the war was in better shape than ever before, and the United States had acquired a large share of the world's gold supply, which could be used as the basis for expanding credits. At the same time, this country had a distinct interest in seeing rehabilitation on a large scale in Europe, not only in order that the market for American goods might be reinstated, but also in order that these nations might become better able to repay their war debts.

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[10] *Review of Economic Statistics*, Vol 1, p 246. D R Crissinger places the value even higher, his estimates running as high as $3 billion. *Economic World*, New Series Volume 24, p 413.

[11] *Review of Economic Statistics*, Vol 1, p 248.

For trade reasons also it was desirable to encourage the development of newer countries, such as the South American Republics

These factors, together with the abundance of loanable funds seeking employment explain the changed position of the United States The significance of this new role can be best discussed, however, after the economics of international trading and lending have been studied

The reader will be impressed with the similarity between the conditions following World War I and those following World War II The chief difference lay in the widespread belief in peace after the first war even though the United States refused to participate in the League of Nations After the second war, the United States rapidly became aware of the threat to world peace in the attitude of Soviet Russia Aid to a stricken Europe became desirable to help economic revival of friendly countries so that they might resist the fate suffered by those Eastern European states that fell under the domination of Russia Strength became the hope of peace This political factor must be kept in mind, as well as the economic and trade factors that we now discuss The absence of a direct appeal of the needy governments to our domestic bond market after World War II and the reasons for employing devices that used the credit of our federal government will be considered shortly

**Foreign investments and international trade theory of international payments.** It is impossible for a country to have an adverse balance of trade continuously for an indefinite period, both visible and invisible items considered, except in the case of gold-producing countries, where gold assumes the status of any other commodity and serves to create the balance Conversely, it is impossible for a country to have a continuously favorable balance of trade, invisible and visible items considered The reasoning behind these statements involves an analysis of the effect of gold exports and imports on prices Normally, exports are used to pay for imports If the balance of trade of a particular country is unfavorable—that is, if imports are in excess of exports—either gold must be used to meet the deficit or the deficit must be made up by borrowing However, for reasons that are obvious, borrowing operations cannot be expanded indefinitely

The exodus of gold from a country tends to lower prices, and makes the country a good market in which to buy and a poor one in which to sell Thus a series of forces is set up that tends to bring exports and imports into balance The reverse situation applies in countries that have favorable balances of trade for a long period of time Such countries can lend funds abroad for some time, in others words, they can export capital (or "import securities"), but sooner or later gold movements will cause an adjustment in the price level within the country that will tend to restore the balance of exports and imports. In the absence of a gold standard, the same tendency for an adjustment is found The country that fails to export enough to pay for its imports finds a surplus of its currency coming into the hands of foreigners The attempts of the latter to sell this money of the importing country depresses the value of its currency in the markets of the world and makes that country a poor place to sell and a good place to buy goods and services

**Visible and invisible trade items** The first effect of a lack of balance between exports and imports is felt in exchange rates If a country is selling more than it is purchasing, its exchange—that is, the price of drafts on banks within its borders—advances in foreign countries Similarly, if it is continually importing more than it is exporting, its exchange falls in other markets, and bills on foreign countries advance in price The reason for this situation is that, customarily, payments in international trade are made by means of drafts against *balances* or *credits* in the country in which payment is to be made, and, when trade is not balanced, there is a maladjustment between the demand and the supply of drafts on foreign countries

Credit balances of the nature just described can be created by: (1) sale of goods or services abroad, (2) borrowing, (3) shipment of gold abroad, or (4) receipt of interest on loans previously made abroad Similarly, such balances have to be drawn against to pay for (1) goods purchased, (2) principal or interest on loans, and (3) services purchased abroad In other words, in addition to the value of goods exported and imported, a number of other items require consideration when fluctuations in exchange rates are being studied Goods exported or imported are known as visible items, whereas loans, interest payments, and payments for insurance and shipping are known as invisible items, because they do not appear in the customs figures These latter items, however, may have just as important an effect on exchange as visible items

**Loans, exchange rates, and trade balances** When the United States makes a loan to a foreign country, the first effect is similar to that of an importation of goods Credits are created here in favor of the foreign nation, against which payments may be made for goods and services In other words, if a particular nation is anxious to increase its imports from this country without shipping gold here, or without changing any of the other factors in the situation, the most obvious method would be to negotiate a loan in our markets Similarly, if a nation that imports more than it exports wishes to stabilize exchange, the same method can be adopted Or, if a nation, lacking an export surplus, wishes to secure gold from our country to stabilize its currency, it can do so by borrowing

However, there is always a day of reckoning In a very short time interest becomes due, and the payment of interest to this country has exactly the same effect on exchange rates as an increase in our exports would have the debtor country's currency would tend to fall in value, and the creditor country's currency, to rise In order to offset this tendency, the borrowing country must ship gold, increase its exports of goods, or engage in more borrowing It is hardly necessary to add that any payment of principal has an effect similar to the payment of interest

Thus a nation may encourage loans as a temporary means of facilitating exports to countries whose current trade balances are unfavorable Loans may likewise be made in new and undeveloped countries, in order to enable them to purchase goods It must be borne in mind, however, that eventually the repayment of the interest and the principal will depend on the ability of the borrowing nation to develop an excess of exports over imports The use of gold, except by a few gold-producing countries, is not a permanent method of financing foreign payments, as the world's stock of gold is limited, amounting currently to between 33 and 34 billion dollars in the present dollar unit, of which amount the United States holds over 72 per cent (December, 1949)[12] Foreign loans can only *defer* actual payment for foreign purchases, for eventually payment must be made with other goods or with services, either to return the principal, or as a series of annual lesser payments for interest, unless, of course, the country defaults

The importance of scrutinizing the purpose of foreign loans, therefore, becomes evident If a nation is not to increase its productive resources as the result of a given loan, if it is not to better its position as an exporting nation, or if it does not have a normal excess of exports over imports, then the chance of an ultimate repayment of the loan and possibly of the interest thereon is slight. However good the intentions of a nation are, however rich it is in undeveloped natural resources, for practical purposes payments of foreign obligations must be made, for the most part, in bills of exchange on other nations, and the balances against which these are drawn are generally created by the sale of goods.

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[12] In contrast, out of $20,313,000,000 world monetary gold stocks in January, 1934, the United States held $6,829,000,000, or 34 per cent Unusual gold imports in subsequent years have resulted partly from the inability of foreign countries to obtain other means of paying for essential imports and a huge flight of capital from war-threatened countries Data from *Federal Reserve Bulletin*, March, 1950, pp 273, 321 Also see comment in article on "Foreign Gold and Dollar Holdings in 1949," p 269 For many countries dollar balances serve as a substitute for gold reserves At the end of 1949, foreign dollar balances totalled $5 9 billion, gold reserves, $9 3 billion

**The United States as a creditor nation.** In the light of the foregoing discussion of abstract principles, it is interesting to review the course of some of the leading elements in the international situation after World War I. The balance of trade in terms of merchandise exports and imports alone, gold movements, and foreign security flotations are shown in the following table.[13]

LEADING FACTORS IN UNITED STATES TRADE BALANCES 1921–1948

(Millions of Dollars)

| Year | *Excess Merchandise Exports* | *Net Gold Imports* | *Foreign Security Flotations* |
|---|---|---|---|
| 1921–1925 (average) | 947 | 265 | 705 |
| 1926–1930 (average) | 744 | 33 | 1,158 |
| 1931–1935 (average) | 312 | 480 | 56 |
| 1936–1940 (average) | 738 | 2,599 | 22 |
| 1941–1945 (average) | 6,544 | 83 | 7 |
| 1946 | 4,831 | 311 | 9 |
| 1947 | 8,696 | 1,866 | 399 |
| 1948 | 5,491 | 1,680 | 477 |

The figures for merchandise movements would have to be supplemented by data on the invisible items, such as shipping and insurance services, interest and dividends, immigrant remittances, and spending on foreign travel, but such items are generally subordinate.[14] Furthermore, the figures for foreign securities sold here, although confined to new capital issues, fail to show either the effect of securities repurchased by foreigners or their purchases of American issues. However, even if allowances were made for the incompleteness of the data, it is apparent that the general picture is one of a newly created creditor nation that continued to show an export trade balance and settled the account by taking gold and securities on a scale that could not last for a long time Furthermore, difficulties, in the form of extremely high tariffs, were placed in the way of merchandise imports that might have created the means of paying a return on this debt, and so prevented its expansion to an even more burdensome level The breakdown that occurred in the depression years following 1929 and the current situation will be considered after a discussion of the analysis of the individual security has been presented [15]

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[13] Sources of trade balance data compiled from *Statistical Abstract of the United States*, various years, and *Federal Reserve Bulletin*. Foreign securities data compiled from *Statistical Abstract of the United States* and *Commercial and Financial Chronicle*.

[14] For estimates covering all the items that enter into the international balance, see *The Balance of International Payments of the United States* (annual), United States Department of Commerce.

**Investment analysis of foreign loans** Corporate loans abroad require practically the same type of analysis as domestic corporate loans The enterprise, the product, the management, and the financial status of the corporation are all factors to be considered However, it is quite unnecessary to reiterate here all that has been said on this subject

In addition to considering the standing of the particular enterprise, however, the investor in foreign corporate securities should give strict attention to a number of general factors that are closely related to the country in which the industry is located For example, an electric light and power company in Brazil may be operating under a very able management, and may have a good financial set-up, but knowledge of these facts alone is insufficient The prospective investor should know specifically the manner in which the interprise will be affected by the commercial law of the country, as well as something about the moral character of the people He should also have data relating to the wealth of the country, its banking facilities, the character of its government, the fiscal policy of the government, and various local tax laws He will wish to know how foreign investors are treated and to what extent money may be converted into dollars for the payment of interest and dividends In fact, a number of general factors reflecting the status of the country in which the industry is located must be considered even when foreign *corporate* securities are purchased These same factors should also be analyzed when the obligations of foreign governments are studied

**Factors affecting credit status of issuing country** The credit of a nation, as well as the credit of corporations within its jurisdiction, is vitally affected by its political position The nominal form of government is irrelevant, but the inherent capacity of a nation for self-government is crucial Compare the political stability of a country such as England with some of the Central American Republics, where revolutions frequently take the place of elections. An unstable government, obviously, has an adverse effect upon the country's credit, whereas a stable government creates confidence in the obligations of a nation, as well as those of business operating within its borders

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[15] For a graphic presentation of price movements of both foreign and domestic bonds for the years 1925–1937, see the *New York Stock Exchange Bulletin*, December, 1937, p 7 For later monthly data see *Survey of Current Business*

The international position of a country is likewise important and is closely related to its political position The manner in which the country was founded, the length of time it has been in existence, and the solidification of national borders are all matters of interest to the creditors of a nation The political hazards of Poland as a "buffer" state after its re-creation under the Treaty of Versailles, and the similar problems of such countries as Yugoslavia and Czechoslovakia were reflected in the high yields obtainable on their dollar obligations long before the threat of Germany had materialized in overt war In contrast, the credit of Switzerland, whose borders have remained untouched for centuries, ranked high as long as her obligations were outstanding in the American market

**Constitutional status of legal system** The legal system under which a country exists is likewise of importance to the investor. In a country such as England, where an established body of constitutional and common law exists, there is no question regarding the rights of parties to enter contracts, nor of the ability to enforce them at law up to the ability of the borrower to pay There is less certainty, however, as to the status of contracts made in countries such as Mexico The importance to the investor in foreign securities of a well-developed system of laws and a strong judiciary cannot be overlooked

**International standing.** The results of past wars emphasize the necessity for considering the position of borrowing countries in respect to the possibility of future wars For centuries the Balkan States have been the war center of Europe, a fact that has been reflected in their credit standing Lenders will consider the likelihood of embroilment in war and the probable strength of a country to repel invasion The events of recent years have shown the difficulties of prediction

The international standing of debtors also varies in respect to independence In dealing with a national government, one deals with a sovereign power. In the case of federal unions, the states or provinces occupy essentially the same subordinate status as our states bear to the United States The various states of Brazil or the provinces of Argentina are examples Then there are so-called autonomous colonies, such as the self-governing dominions of the

British Empire and the colonies of the Netherlands The investor is naturally interested in the political relations of the area in which he commits his funds

**Character of people.** Many investors regard the moral status of a state as one of the most important factors to be considered in making foreign loans In the minds of these individuals, ability to pay is important, to be sure; but, after all, the attitude of a people toward its obligations is the real test as to whether they will be promptly met For centuries Great Britain has met her obligations promptly, and today, in spite of a very heavy debt, she has an enviable reputation among all the nations of the world Quite the reverse is true of certain Central and South American Republics Mexico has the resources and the ability to pay her debts, but she has always regarded them lightly Defaults by Mexico on her foreign loans have been by no means uncommon In July, 1914, the federal debt went into default Since that time various settlements have been negotiated, only to fail of execution Political instability and a lax attitude toward debt explain this country's poor record

**Industrial and social development** The industrial and social development of a country is an index of its ability to meet its obligations when due It is not always possible to measure this factor absolutely, but statistics are nevertheless available that throw some light on the subject Thus the educational standard of a people, and its corresponding advancement in industrial skill, may be judged by literacy statistics that indicate the proportion of the population able to read and write The nature of the leading industries of a country determines to some extent its productive capacity In general, a country with well-developed manufactures and commerce is likely to have greater taxable wealth and better debt-paying habits than one devoted wholly to agriculture and the extractive industries

**Bonds with specific security.** While it is true that moral character and past performance are real factors in public credit, the asset and income position of a country is also an important item to consider in making foreign loans Regardless of the intention of a people to meet its obligations, a lack of adequate assets and productive power may make payment impossible Furthermore, the more difficult payment becomes, the greater the urge to default

The security behind foreign government loans may be either specific assets or the general taxing power In some cases, special assets are assigned as a pledge to secure the payment of a debt The property so pledged may be in the form of stocks and bonds or other property Thus, a part of the security behind the Republic of Panama External Secured Refunding 3½'s, due 1967, is the pledge of the "constitutional fund," which consisted of $6 million of the $10 million paid by the United States in purchasing land for the Panama Canal The fund was invested in first mortgages on New York real estate The issue was also secured by being made a first charge on the annual payment made by the United States under the Panama Canal Treaty At one time, Brazil floated a dollar bond issue secured by a lien on 4,535,000 bags of warehoused coffee The government agreed to maintain a quantity of coffee, the value of which, at 80 per cent of its current price, together with the market value of any other security in the hands of the bankers, should be equal in the aggregate to the par amount of the bonds outstanding, together with one year's interest on such bonds

Still another form of specific security frequently offered to secure foreign loans consists of the revenues from certain taxes, from excises and imposts, or from government monopolies Excise taxes that are pledged may be on certain widely used staples or luxuries Brazil, Cuba, and Columbia have external bond issues that are secured by a pledge of customs receipts

In contrast with specific security of this nature, consisting of a pledge of state-owned property or revenue from some tax, the majority of governmental issues rest upon the general credit of the debtor, which is supported by the power to tax the wealth owned by those who reside in that area Sometimes a government may own income-producing property or securities useful in supporting debt and yet may not pledge them These assets may consist of utility property, such as hydroelectric power plants, railroads and communication systems, forests, mines, banks, or other state enterprises. Whether such property is a source of revenue or not can be determined only from financial statements, which may or may not be available The general wealth of a nation may be studied in statistics on such matters as (1) the area of the country (classified as to uses), (2) railroad mileage (often reduced to a per 1,000 square miles of territory, or to a per capita, basis), (3) number of telephone instruments (frequently reduced to a per capita basis), (4) motor vehicles (reduced to a per capita basis), and (5) estimated total wealth and wealth per capita

**Government revenues and expenses.** The investor, in analyzing the loans of foreign nations, must also study the fiscal policy under which these nations operate and the results of such operation Taxes form the principal basis for government revenues. In theory, the government has the right to exercise its taxing power without restraint, but in practice there is a limit to such power The taxing power of a country varies to some extent with its population, but it also varies in proportion to wealth and productivity The total income of the people of a nation is a better measure of taxing power than the amount of taxes actually collected The rate of increase in taxing power will be faster than the rate of increase in income As the income of the taxpayer increases, his ability to contribute to the government increases progressively rather than proportionately

Other sources of government revenues are earnings derived from proprietary holdings, from fees for administrative services, from excise taxes, and from other forms of indirect taxation Against total revenues must be set the total expenses of the government The ability of a nation to meet its obligations is seen in the net balance, either surplus or deficit, remaining after all operating expenses and interest on its public debt have been met Whether or not a nation is really accumulating a surplus can be determined only by a study of its past record and the budget for the current and future periods, which study involves an analysis of public income and expenses as projected by its government

**Government debt** The net debt of a nation has the same significance with foreign loans as with domestic civil loans Net debt may be reduced to a per capita basis, and significant comparisons may be made with the net per capita wealth, or the per capita income of the country It is often helpful to carry the analysis of public debt even further In the first place, a nation's debt may be productive or unproductive Debts incurred for the purpose of constructing railroads, for example, are productive, but debts incurred to finance huge armaments are unproductive A preponderance of the latter debts is highly undesirable

Debts may also be further classified as internal or external, depending on whether they are held primarily within the state or by foreigners The payment of principal and interest on internal debt is accomplished by the transfer of credits from one set of inhabitants to another, and causes no exodus of wealth across the country's borders The payment of external debt is more difficult, for here there is involved a transfer of funds across the borders of the state, and payment in gold, in goods, or in services is necessary Thus the external debt of a country payable in United States dollars involves the problem of the debtor's acquiring that currency The internal debt, however, may be paid with currency that is obtained by printing additional paper money or by bank credit expansion Resulting depreciation of the country's money may serve to lessen the burden of a domestic debt while it reduces the buying power of the bondholder by so much

No doubt, it has already occurred to the reader that, for nations with depreciated currencies, the payment of external loans is difficult in proportion to the depreciation that occurs in their own currencies Consequently, while it is customary to say that the American investor bears no currency risk when he holds an external, or dollar, bond, actually, the risk of default is increased when currency depreciation increases the burden of his debtor in purchasing the needed dollar exchange

**Value of currency.** The value of a country's currency may be considered in terms of either internal purchasing power or of the goods it can command in foreign trade Internal purchasing power is measured by index numbers, which indicate the extent to which prices within the country, in terms of its currency, have advanced or declined in reference to a base period The external value of a currency is determined by reference to exchange quotations Prior to the World War I, the exchange rates of most nations did not vary widely from the par of exchange After the war, however, both internal and external currency values depreciated severely in many countries of the world This depreciation was occasioned largely by a failure on the part of these countries to balance their budgets and by the use of fiat money or bank deposit inflation on a large scale to meet deficits

An excellent statement of the close relationship between domestic financial conditions and the foreign exchange position of a nation is clearly set forth in the following paragraph appearing in the report of the Dawes Committee on Reparations [16]

> For the stability of a country's currency to be permanently maintained, not only must her budget be balanced, but her earnings from abroad must be equal to the payments she must make abroad, including not only payments for the goods she imports, but the sums paid in reparations Nor can the balance of the budget itself be permanently maintained except on the same conditions Loan operations may disguise the position—or postpone its practical results—but they cannot alter it If reparation can, and must, be provided by means of an inclusion of an item in the budget—i e, by the collection of taxes in excess of the internal expenditure—it can only be paid abroad by means of an economic surplus in the country's activities

This statement contains an excellent lesson for the foreign investor. Long-term investments in the securities of countries that consistently fail to balance their budgets should be avoided

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[16] "Report of the First Committee of Experts to the Reparations Commission," April, 1924, Part I, No VIII (d)

**Foreign trade.** The relation of the foreign trade of a country to its position as a debtor nation is highly important Since the external obligations of a nation, as well as those of its subjects, require payments in foreign countries, the whole problem of the international balance of payments is involved We have already considered the various items included in the balance sheet of international payments If a nation is ultimately to pay interest or principal on its debt, it is necessary that credits exceed debits in the form of exports over imports, or in the form of an excess of services rendered to, over those performed by, foreigners The capacity of a nation to meet the service on its foreign debt, therefore, is closely related to its total international trade balance, both visible and invisible items considered

**Study of the specific loan.** When the investor turns from the general credit of a country to the study of the terms in the bonds of a foreign government, he will give particular attention to four matters (1) the currency of payment, (2) the security, (3) the terms of repayment, and (4) the purpose of the issue Let us add a few details to what has already been said on these matters.

1 *Currency of payment* In general, the fear of foreign exchange fluctuations tends to make the American investor insist upon payment in U S dollars Occasional exceptions are found in a few countries whose currencies have compared favorably with the dollar Canadian issues offer the best current example Even here bonds payable in U S dollars or multiple currency issues that give the option of either U S or Canadian dollars are favored In the past British bonds payable in pounds sterling and bonds of the Netherlands payable in Dutch guilders have been sold in our investment market Such obligations have a special attraction when appreciation is expected either because of improving credit standing or an expected rise in the country's exchange rate

2 *Security* The possible use of property or tax revenues as security for a bond issue has been noted earlier, as well as the fact that the observance of the pledge in troubled times rests upon the integrity of the debtor government[17] Governments with the highest credit are able to borrow at reasonable rates without giving specific security

Guarantees are sometimes found in this field Thus a government might add its guarantee to the obligations of a political subdivision or one of its own agencies, or even of a private business corporation An unusual guarantee occurred in the reconstruction period after World War I, when the Republic of Austria sold bonds (1923) guaranteed by other European powers Major shares of the liability were borne by Great Britain, France, Czechoslovakia, and Italy, lesser shares by Belgium, Sweden, Denmark, and the Netherlands The issue took place under the auspices of the League of Nations As we shall see shortly, the present operations of the International Bank for Reconstruction and Development likewise employ the credit of a group of governments, chiefly that of the United States, to make similar reconstruction loans

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[17] For a discussion of secured and guaranteed loans, see Madden, John T, and Nadler, M *Foreign Securities* (New York Ronald Press Co, 1929), Chapter IX

3 *Terms of repayment* The sinking fund is a common feature of foreign government bonds sold in this country This repurchase arrangement may be designed to repay either all or a substantial part of the issue by the final maturity Sometimes, particularly in the case of a readjustment of a defaulted debt, a sinking fund is set up, the amount of which is contingent upon the collections from a certain tax Thus, the Republic of Chile devoted certain taxes on export commodities to interest and debt retirement The fund may be a potent market support When bonds have fallen substantially below par, a given sum will purchase a large par amount of bonds The buyer interested in appreciation will give careful study to the sinking fund feature and its operation

A feature connected with redemption is the lottery device Bond numbers are drawn periodically and huge premiums or prizes go to the holders of the drawn bonds The feature has been widely employed by European and Latin American countries in their domestic issues They operate on the theory that many would prefer a chance at a large prize to an equivalent small but certain amount of additional interest, and that they induce thrift among persons who would not otherwise invest. The issuing government regards the prizes as so much added interest cost over the regular rate of interest

4 *Purpose of issue* Ideally, foreign government borrowing should be for a productive purpose, one that makes it easier for the borrower to create an export balance that will aid the payment of the debt charges Productive loans are those for such purposes as electric-power development, railroads, highways, and port development, unproductive, those for current consumption as in the case of a deficit in the government budget that is not the result of capital expenditures In practice, a government with sufficient credit and an ability to service an external debt can borrow for either purpose On the other hand, a government with weak

credit may be unable to borrow for even productive purposes, save at prohibitive interest rates

Indeed, a nominally productive investment may be so uneconomic as to be "productive" in name only Thus, a government steel mill might be uneconomic because its costs prove to be so high as to exceed the cost of already available steel This condition may be because costs turn out to be unexpectedly high or an adequate market may be lacking to keep operations at a reasonable level[18] Newly constructed developments in a foreign country are often plagued by high costs Labor that is paid a low wage rate may be high-cost because of a lack of skill or poor health and low productivity The value of technical know-how as supplied by skillful management is often underrated Transportation costs to the market may also be a cost handicap

A major problem of the International Bank for Reconstruction and Development has been the economic soundness of prospective loans The Bank emphasizes the importance of education and health among the working population, the need for trained skillful labor, for technical leadership, and for favorable political and economic conditions, as well as suitable markets in the case of productive loans[19] In short, successful loans must fit the conditions of the borrower to be of genuine value The Bank reaches the conclusion[20]

> Perhaps the most striking single lesson which the Bank has learned in the course of its operations is how limited is the capacity of the underdeveloped countries to absorb capital quickly for really productive purposes (p 8)

The Bank's experience to date indicates that the Bank now has or can readily acquire sufficient resources to help finance all sound, productive projects in its member countries that will be ready for financing in the next few years, that can appropriately be financed through repayable foreign loans and that cannot attract private capital (p. 13).

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[18] Henry Hazlitt, in his *Illusions of Point Four,* quotes an ex-Russian economist "the rapid construction of the great power station on the Dnieper (Dneprogez) is accounted one of the most brilliant of the Soviet government, and it has already won for the government the support of many foreign travellers But from an economic point of view the rapid construction of Dneprogrez cannot be justified at all, because many years must elapse before the factories which it is supposed to serve will be completed Meanwhile no funds are available for house building in Magnitogorsk, and it is very probable that the unsatisfactory results yielded by this smelting works are the direct outcome of the disgusting conditions in which the workers are compelled to live" (pp 11–12) The fiasco of Britain's huge peanut plantation in Africa is also cited (p 13) Such examples, as well as the Lustron failure, a prefabricated steel house manufacturer financed by our own Federal Government, should raise some doubts in the minds of the most ardent advocates of socialism that government planning is inherently superior to that of private businessmen

[19] International Bank for Reconstruction and Development, *Fourth Annual Report,* 1948–1949 (Washington, D C The Bank, 1949) The statement in the "Role of the Bank" (pp 7–14) is an excellent analysis of the problem of economically effective foreign loans

[20] *Ibid*

The importance of attracting private investment for business ventures is stressed by the Bank because of the tie-up of private capital with engineering, marketing, and other business skills.

Before considering the nature and work of this Bank, the experience of private investors in foreign governmental obligations during the 1930's, which made the creation of this agency necessary, should be noted.

**American experience in foreign investment.** As previously stated, our chief experience with foreign investments came after World War I when the United States gradually took over a part of the place formerly occupied by the British. The first test of these investments made during the 1920's was the depression of the 1930's. The extent and geographical distribution of the troubles in this field may be had from the following table of bonds outstanding—almost wholly governmental debt—and the per cent in default at the end of the decade.[21]

STATUS OF ALL PUBLICLY OFFERED FOREIGN DOLLAR BONDS, DECEMBER 31, 1939

(Millions of Dollars)

| | *Total Outstanding* | *Defaulted As to Interest* |
|---|---|---|
| Latin America | 1,714 | 73.6% |
| Europe | 1,641 | 57.8 |
| Far East | 569 | 1.0 |
| North America | 2,168 | 4.9 |
| Total | 6,092 | 38.1 |

In many instances the defaults have been attributed to the depression emergency after 1930. A considerable number of foreign loans, however, were contracted under conditions that made default almost inevitable.[22] Bribery was employed in certain instances to close contracts. Borrowing was made so easy as to encourage wasteful expenditures In one case it was revealed that a weak country receiving a loan for railroad construction had spent the proceeds on armaments Yet the investment bankers who had arranged the first loan arranged another loan to the same country afterwards [23]

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[21] *Moody's Manual of Investments: Governments and Municipals* (New York: Moody's Investors Service, 1941), p. a23. Original table shows status of individual countries. In reading this table, it should be remembered that many of these bonds were no longer owned in the United States but had been bought by the debtor countries or their citizens.

[22] For an unusually illuminating account of our unfortunate foreign investments, see Winkler, Max, *Foreign Bonds: An Autopsy* (Philadelphia: Roland Swain Co., 1933).

In addition to initial weakness in a number of debt situations, the exigencies of hard times were seized upon in some cases as an excuse for default In at least one instance a default was produced by drastic governmental restrictions upon exchange Funds that might have been used for bond interest were then used to acquire some of the greatly depreciated bonds

World War II improved the economic position of some countries, such as some in Latin America that sold food and other supplies to the belligerents Some of the warring countries, on the other hand, in both Europe and Asia, were added to the list of the defaulting Our most favorable investment experience with a major borrower over a long period has been with Canada, even though some lesser borrowers have had an unblemished record and some of the Canadian political subdivisions have had financial difficulties The similar economic and political background has made Canadian securities seem close kin to domestic securities in spite of some exchange fluctuations in the Canadian dollar

The readjustment of defaulted foreign bonds has been a slow process In a few cases, the sole default was in sinking fund payments Where default extended to interest payments, some countries offered compromises on the payment of matured or maturing coupons, rather than complete nonpayment, such as (1) part payment in cash and part in scrip, (2) all scrip, (3) part cash to be accepted as full payment, and (4) payment in the currency of the issuer worth various amounts in relation to the coupon claims

Whenever a defaulted debt undergoes formal readjustment, the interest rate is usually lowered but the principal amount is customarily unchanged Thus, in its debt readjustment program of 1937 the Republic of Uruguay after a period of reduced interest payments that began in 1933 offered the holders of 8's of 1946 a new issue of 4–4¼–4½ per cent sinking fund bonds of 1978, the coupons to increase with the passage of time Holders of the old bonds who refused the conversion offer received no payments Sometimes differences in coupon rates were recognized in the readjustment plan, as in this case where a 6 per cent issue received bonds each with 3¾–4–4⅛ per cent coupons and a 5 per cent issue, a straight 3½ per cent coupon Sometimes differences in security were recognized by differences in treatment after a default Thus, the State of Sao Paulo 7's of 1940, secured by a pledge of coffee, received more interest than other issues without such pledge

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[23] Salter, Sir James Arthur, *Recovery, the Second Effort* (New York D Appleton-Century Co., 1932), pp 120–122

As long as the financial position of the debtor remains dubious, no formal adjustment may take place, and each year the bondholder may be offered partial payments in exchange for his coupons The investor is somewhat at the mercy of the debtor since he must either accept the incomplete payment or forego income altogether in the hope that he may obtain better treatment at some uncertain date Usually the majority accepts the present payment Sometimes a definite source of revenue is set aside for debt service

Some protection has been afforded bondholders by the formation, in 1933 at the request of United States Government authorities, of the Foreign Bondholders' Protective Council, Inc The Council assists in safeguarding the interests of American holders of foreign public dollar bonds issued or guaranteed by foreign governments or their subdivisions No deposits of bonds are accepted nor does the council act as a legal agent It merely seeks a record of holders so that they may be informed of council action It has aided in bringing about a resumption of debt service on defaulted issues and obtaining equitable plans of debt readjustment

Because the wholesale losses in the field of portfolio foreign investment during the 1930's were clearly recorded in the market record, they have been more widely recognized than the more satisfactory results from "direct" foreign investments by American business corporations Losses after 1929 were chiefly in the former field The difference in experience with respect to both principal and ordinary income may be seen for the two subdivisions in the following table[24] The apparent net capital loss on combined direct and "portfolio" foreign investments between the end of 1919 and 1940 was $3 6 billion, but by 1948 this loss was reduced by over a billion Income received over this period was $18 billion, and it will be noted that "portfolio" investment made a relatively favorable showing, even though "direct" investment still led here as on the record of capital, or principal, value The losses of principal represent partly actual liquidation and partly changes in market value

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[24] Abelson, Milton, "Private U S Direct Investments Abroad," *Survey of Current Business*, November 1949, p 20

PRIVATE FOREIGN INVESTMENT EXPERIENCE 1920–48*

(Millions of Dollars)

| | *Total* | *Direct* | *Portfolio* |
|---|---|---|---|
| Value at beginning of period | 6,456 | 3,880 | 2,576 |
| Net additional investment during period | 11,293 | 7,271 | 4,022 |
| Total | 17,749 | 11,151 | 6,598 |
| Value at end of period | 15,283 | 11,379 | 3,904 |
| *Net capital gain or loss* | –2,466 | +228 | –2,694 |
| Income received | 17,995 | 11,892 | 6,103 |

* Original table shows record for interim periods.

This unhappy experience of the public with foreign government bonds explains why special agencies depending upon the credit of our Federal Government had to be created after 1945 if loans were to be obtained by foreign governments in need of rebuilding their economies. The role of United States government agencies should also be recognized. At the end of 1949, their loans to foreign governments had increased to a record $13.5 billion from about $2 billion in 1946. This figure may be contrasted with the total of $3.7 billion of foreign dollar bonds outstanding at the end of 1949, of which approximately 37½ per cent was still in default.[25]

**International Bank for Reconstruction and Development.** Of the three chief financial agencies created to meet the needs for economic rehabilitation of the world economy after World War II, only the International Bank for Reconstruction and Development has sold its securities to the investing public. The International Monetary Fund has been wholly financed from the treasuries of member governments or their central banks. The European Recovery Program (ERP) has been supplied with funds from our own Federal treasury.

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[25] *Wall Street Journal*, October 30, 1950. These figures, as well as those following, were as reported by the Foreign Bondholders' Protective Council, Inc. Canadian debt amounting to $1.2 billion, or one third of the 1949 total, was receiving full interest and sinking fund payments, with all but a small part on original contract terms. Latin American nations made the greatest progress in the postwar years, reducing defaults from 52 per cent in 1946 to 33 per cent in 1949. The total outstanding was reduced from $1.1 to $.9 billion in that period. Of the European countries, Belgium, Denmark, Finland, France, Ireland, Norway, and the Netherlands provided full service on all American issues. Czechoslovakia and Italy maintained service on debt adjusted in 1946 and 1947. Of the $1.1 billion European issues outstanding at the end of 1949 about three-fourths was in default. Nearly one half of the latter was prewar German issues, direct or guaranteed, with the remainder owed by Austria, Bulgaria, Danzig, Estonia, Greece, Hungary, Lithuania, Poland, Rumania, Russia, the Saar and Yugoslavia. About 58 per cent of the Far Eastern debt of $.5 billion was defaulted dollar bonds of China and Japan. Australian loans received full service.

The purpose of the International Bank is to make sound loans either directly to member governments or upon their guaranty for productive projects that have been carefully investigated for their soundness Examples of government-guaranteed loans are found in the Brazilian guaranty for a Brazilian Traction Light & Power Company loan and The Netherlands guaranty of loans for certain Dutch steamship companies The credit of the borrowing government is also scrutinized and loans are not an automatic right Loans are only made where funds are unavailable through private channels

Most of the supply of funds has come from the capital stock subscriptions of member governments, of which only about a fifth has been paid in The Bank also has the right to issue its bonds in various currencies as it requires funds These are expected to be largely in United States dollars, of which $250 million had been sold as of June 30, 1949 An issue of 17,000,000 Swiss francs had also been sold The bonds enjoy a high credit rating, which is the result of the substantial support of the United States Government The balance sheet showing the above debt also showed among the assets investments of $445 million in U. S securities and a liability of the U S Government for $2,551 million on its original subscription of $3,175 million for capital stock This balance is subject to call to meet the Bank's obligations Were the Bank's bonds to exceed the obligations of the United States, their rating would have to rest for the amount of the excess upon the quality of the loans held by the Bank The *Annual Report* of the Bank should be consulted by the interested investor for a fuller understanding of operations

Because the funds loaned by The International Monetary Fund are derived from members, its work need not concern us here However, its function is important to the investor in the international field because of its influence in the direction of greater exchange-rate stability That its success has been limited is suggested by the fact that in 1949 only El Salvador, Guatemala, Mexico, Panama, and the United States had accepted in full the obligation to avoid restrictions on current payments in their money and discriminatory currency practices[26] Until the value of a currency is able to meet the acid test of a free market, its real worth at the established parity is likely to be questioned

The primary work of the European Recovery Program has been to make outright grants or gifts to enable European countries to recover from the devastation and economic disruption of World War II The period for these grants is a limited one and their amount is to be gradually reduced The program is a recognition of the American stake in a revived European economy capable of withstanding military aggression and the threat to political stability that goes with widespread unemployment and starvation[27]

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[26] International Monetary Fund, *Annual Report*, April 30, 1949, p 26

**Conclusions** This survey of foreign investment leads to two broad conclusions (1) that private investment is likely to be channeled primarily through our American business corporations, and (2) that foreign government borrowing, with certain exceptions, notably Canada, will find it necessary to resort to such agencies as the International Bank, the International Monetary Fund, and intergovernmental aid The former has the advantage of sending abroad technical and business skills so necessary to making capital productive For the investor there is the advantage of mingling the risk with that of the other activities of the given corporation and obtaining management to represent his investment abroad Private enterprise, to a large extent unrecognized, has been implementing the objectives known as President Truman's Point Four on a scale that compares favorably with governmental credits[28] Recognition of some essentials for an expansion of such a program was given by a majority of Latin American nations in a conference at Bogota (1948) when they agreed to adopt no discriminatory measures that would impair the rights of foreign nationals, to compensate investors fully for any expropriated capital, to impose no unjustifiable restrictions upon the transfer of foreign capital or earnings, and to liberalize tax laws so as to reduce or eliminate double taxation (that is, in both the country of investment and in the investor's country) The alert reader will notice the possibility of room for differences of opinion in such phrases as "compensate fully" and "unjustifiable restrictions "

These, however, are the first steps necessary to establish a favorable climate for international investment [29] They become effective as nations establish stable social and political systems that recognize the useful part played by private investment in economic progress and the creation of wealth, and cease to treat it as a device for "exploitation by the capitalist class" Consequently the well-informed investor will watch the development of education, industrial skills and the growth of both economic and political institutions that favor a wide diffusion of the benefits of progress Per capita data must be studied to make sure that population increases are not outstripping productivity increases A rising standard of living is only possible when productivity gains at a more rapid rate than population

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[27] The reader interested in U S Government credits abroad for their influence on the international financial picture should read Ryan, Franklin W, "Servicing Foreign Credits of the U S Government," *Survey of Current Business*, November 1949, p 14 From the creation of the Export-Import Bank in 1934 to June 30, 1949, the United States Government has extended $11 3 billion in loans and credits About $1 5 billion have been repaid, leaving a balance of $9 8 billion, excluding World War I loans Chief items in the balance are Export-Import Bank loans ($2 2), Lend-lease and surplus property credits ($2 8), a special British loan ($3 75), and Economic Co operation Administration ($0 9) The article projects future annual payments to be made by debtor governments

[28] In his inaugural address on January 20, 1949, The President announced, as a fourth major point of our foreign policy, a program of assistance for the under developed areas of the world

Suitable domestic policies are also necessary to successful foreign investment We must be willing to admit foreign products to our markets to make possible the payment of interest and principal on loans as well as to pay for American exports A growing volume of travel by Americans abroad is also likely to provide foreign nations with dollars Important imports have been coffee, sugar, wool, vegetable oils, paper and pulp, petroleum, copper, tin, and aluminum The free admission of mineral products insures lower prices to the consumer and the conservation of scarce, exhaustible resources upon which our industrial economy rests As an important creditor, the Government could advantageously stock-pile the nonperishable minerals from abroad in times of low demand Less restrictive tariff barriers would permit the import of manufactured goods for which foreign producers are low-cost producers and so provide such countries with means to acquire our low-cost, mass-produced automobiles, electric equipment and appliances, machinery, drugs, and similar goods The problem is to resolve the conflict between the special interest of those individuals and groups that may be injured by changes in the flow of trade and the broader interest of the whole community in an exchange of goods and services that will maximize its real income

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[29] For a fuller treatment, *The United States and Foreign Investment Problems* by Cleona Lewis is recommended, especially Chapters V, VI, Opportunities for Foreign Investment, Chap VII, Foreign Policies Hindering Future Investment, and Chap X, Government Policies Affecting American Investment Abroad (Washington, D C: The Brookings Institution, 1948)

# Part III

# The Mathematics and Mechanics of Investment, Taxation, and the Business Cycle

# 22

# Mathematics of Investment

**Yields of securities contrasted with price.** Almost the first technical term one encounters when considering investments is that of "yield" or "basis." Some bonds, such as serial municipals and equipment trust certificates, are characteristically quoted to yield a certain rate of return, such as 3.25 or 4.70 per cent, instead of being quoted upon a price basis. In fact, the mere price at which a given bond is quoted in itself means little. A bond selling at 104.70 with a $5\frac{1}{2}$ per cent coupon rate of interest and with ten years to run to maturity is really cheaper, in terms of income, than a $5\frac{1}{2}$ per cent coupon bond selling at 103.22, with but six years to run. The first bond, although selling at a greater premium, nevertheless yields to the purchaser a return of 4.9 per cent, while the latter yields only 4.875 per cent.

The investor, therefore, is far more interested in the return that he receives on his investment than in the matter of price. The price at which a bond is quoted is only one of three factors that determine the effective yield on the investment. The other two factors are the length of time the bond has to run to maturity and the coupon rate of interest.[1]

**Computation of yields and values from bond tables.** In practice, the yield of a bond may be determined by the use of bond tables provided that the following information is known: (1) the price at which the bond is selling, (2) the coupon or stated rate of interest, and (3) the length of time the bond has to run to maturity. Or, it is possible to determine from a bond table the price at which a bond will have to sell to give a desired yield, if one knows, in addition to the yield sought, the coupon rate of interest and the length of time to maturity In fact, given any three of these factors, the fourth factor may be derived from the ordinary bond table

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[1] A fourth factor, usually ignored, might be the length of period between income dates. Interest payments on some bonds are made annually, on others quarterly; but in most cases interest is payable semiannually.

**Formula for determining table of bond values and yields** While, later on, we shall take up in detail the use of bond tables, it may be helpful for the student if we first consider the algebraic processes by which the bond table itself is constructed The value of a bond consists of two sums (1) the present value of the redemption price (usually par), and (2) the present value of an annuity consisting of the interest payments on the par value of the bond

**Compound interest and discount** In finding the present worth of any given sum, one must first consider the formula for computing compond interest This formula is derived as follows

$n$ = number of interest periods
$i$ = rate per period

Then the valuation of $1 at compound interest for $n$ periods at $i$ rate is $(1+i)^n$

Thus, let us assume that $1 is invested at compound interest, computed semiannually, for ten years at 6 per cent Substituting in our formula, we have.

$$(1+i)^n = (1 + 03)^{20} = (1\ 03)^{20}$$

The computations in this case are facilitated by the use of logarithms

log of 1 03 = 0 012837
log (1 03)$^{20}$ = 25674
= log of 1 8061
$1 80 = the desired amount

The present worth of a sum discounted at a given rate of interest is the reciprocal of the sum at compound interest, that is, compound discount is the reciprocal of compound interest The present worth of $1 at compound discount for $n$ periods at $i$ rate thus becomes

$$\frac{1}{(1+i)^n}$$

If $1 accumulated at 6 per cent semiannual compound interest for ten years amounts to $1 80, then the present value of $1 payable ten years hence can be found by dividing one by 1 80, and the result is $ 55

**Valuation of annuities** If one has a knowledge of how to find the present value of an amount payable in the future, it becomes possible to work out a formula for determining the present worth of a whole series of coupons, or interest payments, attached to a bond Such a series of payments is known as an "annuity certain", that is, it is a series of equal amounts paid at regular intervals, and the time of payment does not depend upon an uncertain contingency To the present value of the coupons must be added the present worth of the principal sum, for, as previously indicated, the purchase price of the bond is the agreed present worth of each and all coupon payments at their respective due dates, in addition to present value of the principal, all at compound discount at the effective yield

The formula for determining the present worth of an annuity of \$1 for any given number of payments is as follows

Let $a =$ the unknown quantity, the present worth of such a series
$i =$ the interest or net yield rate for each period ( 03 in the case of a bond with a net yield of 6 per cent payable semiannually)
$n =$ the number of periods (twenty in number in the case of a ten-year bond with semiannual interest payments)
$c =$ the amount of one coupon

$$\text{The present worth of the 1st payment} = \frac{c}{(1+i)}$$

$$\text{The present worth of the 2d payment} = \frac{c}{(1+i)^2}$$

$$\text{The present worth of the 3d payment} = \frac{c}{(1+i)^3}$$

and so on for any number of coupon payments

Since we are seeking to derive a general formula for any number ($n$) of payments, it is possible to state the series in the following form

$$a = \frac{c}{(1+i)} + \frac{c}{(1+i)^2} + \frac{c}{(1+i)^3} \qquad \frac{c}{(1+i)^{n-2}} + \frac{c}{(1+i)^{n-1}} + \frac{c}{(1+i)^n}$$

or, reduced to simple terms,

$$a = \frac{c}{i} - \frac{c}{i(1+i)^n}$$

Probably the simplest method of performing this reduction is to treat the coupons as a perpetual annuity $\frac{c}{i}$ and to subtract the value of the coupons after maturity The coupons after maturity, which are eliminated, would be a perpetual annuity beginning after $n$ periods $\left(\frac{c}{i} - (1+i)^n\right)$

This process gives

$$\text{Present value of coupons} = \frac{c}{i} - \frac{c}{i(1+i)^n}$$

The present worth of the principal of the bond is found simply by dividing it by $(1+i)^n$—that is

$$\text{Present value of Principal} = \frac{\text{Principal}}{(1+i)^n}$$

The last step in the formula for bond value is to add the present value of principal and coupons together and to simplify the result Since the price of a bond is usually expressed as a percentage of parity, the value of one (100%) will be substituted for Principal in the second formula, and $c$, the coupon rate, will be understood to be a percentage in the first formula Thus, for a 5 per cent bond, $c = 05$

Adding the two formulas together

$$\text{Bond value} = \frac{1}{(1+i)^n} + \frac{c}{i} - \frac{c}{i\,(1+i)^n}$$

$$= \frac{i}{i\,(1+i)^n} + \frac{c\,(1+i)^n}{i\,(1+i)^n} - \frac{c}{i\,(1+i)^n}$$

$$= \frac{i + c\,(1+i)^n - c}{i\,(1+i)^n}$$

In the application of this formula, semiannual compounding of interest is assumed, and therefore $c$ equals one half of the annual coupon rate, $i$, one half of the net yield basis, and $n$, twice the number of years to maturity

**Solution of exponential equation by trial and error** In the use of this formula, the problem is ordinarily to determine $i$, the yield basis, the other factors are given "Bond value" is the purchase, or market, price, $c$ is the coupon rate, and $n$ is the number of periods the bond has to run It would at first seem that this equation, with only one unknown quantity, could be solved directly The unknown quantity, however, is exponential It appears in the equation with many powers Thus in a 20-year bond, the term $(1+i)$ would have to be expanded to the 40th power, which would give the unknown $i$ with every power from the first to the 41st power, and in both the numerator and denominator of the fraction. The only method of solution, therefore, is by trial and error.

In order to show how this formula may be used in this way, let us assume that a 6 per cent 30-year bond is purchased at 105, and that the net yield is required. Substituting in the formula,

$$1.05 = \frac{i + .03(1+i)^{60} - .03}{i(1+i)^{60}}$$

$$1.05i(1+i)^{60} = .03(1+i)^{60} + i - .03$$

The bond having been purchased at a premium, it is evident that the net yield is less than .03 semiannually. Solving by approximation, let us try .029.

$$1.05 \times .029(1 + .029)^{60} = .03(1 + .029)^{60} + .029 - .03$$
$$1.05 \times .029(1.029)^{60} = .03(1.029)^{60} - .001$$

The use of logarithms from this point on will facilitate the solution.

| *Left Side of Equation* | | *Right Side of Equation* | | |
|---|---|---|---|---|
| log 1.05 | = 0.02119 | log .03 | = 8.47712 − 10 | |
| log .029 | = 8.46240 − 10 | log $(1.029)^{60}$ | = 0.74520 | − .001 |
| log $(1.029)^{60}$ | = 0.74520 | | | |
| log of product | = 9.22879 − 10 | log of product | = 9.22232 − 10 | |
| Product | = .1693 | Product | = .1678<br>− .001 | |
| Total | = .1693 | Total | = .1668 | |

.028 may next be tried.

(.028 − .03 = − .002)

| | | | | |
|---|---|---|---|---|
| log 1.05 | = 0.02119 | log .03 | = 8.47712 − 10 | |
| log .028 | = 8.44716 − 10 | log $(1.028)^{60}$ | = 0.71940 | − .002 |
| log $(1.028)^{60}$ | = 0.71940 | | | |
| log of product | = 9.18775 − 10 | log of product | = 9.19652 − 10 | |
| Product | = .1541 | Product | = .1572<br>− .002 | |
| Total | = .1541 | Total | = .1552 | |

Neither the use of .028 nor of .029 for $i$ makes the equation balance exactly, but the foregoing trial shows that a value somewhere between these two figures would bring about the desired equality A value of 028 or 029 on a semiannual basis would equal 5 6 or 5 8 on an annual basis To carry the decimal point further for greater accuracy, we might continue by the same method, starting with an assumed yield of 0281, 0282, and so on It would be found that 0282 would come very close to satisfying the equation, thus giving an approximate yield in this assumed case of 5 64 per cent

When only a rough approximation of yield is sought and the tables described below are not available, a simple calculation may be used which divides the average investment into the average income Thus, if one purchases a premium bond his initial investment is cost but this amount declines toward par as one recovers the part of his principal tied up in the premium from the semiannual coupon received and writes his book investment down towards par accordingly Similarly, the investment in a discount bond rises from cost toward par as the accumulating discount is added to book investment value over the life of the bond, or, if not actually written up, is assumed to be so for the purpose of yield calculation Average income consists of the coupon plus a prorated fraction of the discount or minus a fraction of the premium

Thus, the application of this method to the bond for which the correct net yield was ascertained by formula above would give the following results

Average income = $6 00 (Coupon) — [$5 00 (Premium) — 30 (Years to Maturity)] = $5 83 1/3

Average investment = $102 50, or average of Cost and Par

Dividing Income by Investment gives 5 69% as the approximate net yield

The result may be made more accurate by taking as average investment par plus six tenths (rather than one half) of the premium, or minus six tenths of the discount

If this refinement had been used, the net yield would have appeared as 5 66 per cent instead of the 5 64 net yield obtained from the use of the correct formula [2]

**Use of bond tables commonly employed.** Although we have indicated the mathematical formula by which the yield of a given bond may be determined, one would scarcely attempt to compute the yield of a given issue in this way In practice, the investor depends almost entirely on tables of bond values for computations of this nature In these tables prices are worked out for an extended range of maturities, yields, and coupon rates The results are customarily presented in the form of a table for each maturity By the use of such tables, it is very easy to determine with reasonable accuracy the net yield of a bond, when the price, the maturity date, and the redemption value are known Similarly, it is possible to determine the price at which a bond of known redemption value and maturity must be purchased in order to give a specified return

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[2] Still further exactness may be had from the use of this empirical formula if a variable factor is used instead of six tenths for different maturities and yields For a table of such factors, see Fulton, W Yost, "A Streamlined Bond Yield Formula," *Barron's*, December 8, 1941, p 18

A number of bond tables are in common use at the present time We shall illustrate briefly the Johnson,[3] the Sprague,[4] and the Equitable tables [5] The Johnson tables show yields at various prices to the third decimal (Prices corresponding to yields most commonly found vary by 25-cent intervals per $100 unit ) Tables are presented for bonds with coupon rates of 3½, 4, 4¼, 4½, 5, 5½, 6, 6½, 7, 7½, and 8 per cent Unlike other tables in common use, the Johnson tables give yields directly for various common prices, coupon rates, and maturities In addition, the Johnson tables include data that provide a quick and ready means of determining the yield of any bond that has a "repayment value" (or redemption price) greater than its face value The Sprague table shows the value to the nearest cent of a bond for $1,000,000, bearing interest from 3 to 7 per cent, and yielding from 1¼ to 10 per cent The Sprague table is divided into three parts one part dealing with usual rates, from 2½ to 5 per cent, another dealing with lower rates, 1¼ to 2½ per cent, and a third, dealing with the higher rates, 5 to 10 per cent By the use of certain tables, it is possible to work out values for bonds whose interest is payable quarterly or annually

The Equitable table is designed to facilitate interpolation for time Differences for months and days are contained under each value (see page 648)

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[3] Johnson, David C, Stone, Caleb, Cross, Milton C, and Kircher, Edward A, *Yields of Bonds and Stocks* (New York Prentice-Hall, Inc, 1928) The yields are presented in the form of percentages, correct to the nearest five ten-thousandths of one per cent, and there is a table for the ready determination of yields of bonds to be repaid at a premium

[4] Sprague, Charles E, *Extended Bond Tables* (New York The Ronald Press, 1915) This is the general type of table most frequently used in practice For ordinary yield calculation, a table that permitted accurate calculation of the net yield per cent to two decimal places (thus, 5 62 per cent) would suffice, while a table that permitted accuracy to four places might be desirable for billing customers where bonds were sold on a yield basis, as in the municipal field The interested reader should consult the catalog of tables offered by the Financial Publishing Company of Boston

[5] Bartholomew, James P, *Equitable Trust Company of New York Rapid Bond Tables* Published by permission of Equitable Trust Company of New York

**Computation of yield for an even period** A specimen page from the Johnson table is shown on page 641 Let us assume that we have a 5 per cent coupon bond, maturing in 20 years, which is quoted at 103 To find the yield by the Johnson tables, one has but to turn to the page headed 5 per cent bond, and run down the 20-year column to the yield corresponding to the price 103 The corresponding yield is 4 766– per cent In practice, however, the proposition is frequently complicated by the fact that the actual price at which the bonds are selling is not given in the bond tables, for it would be a prodigious task to work out tables for every conceivable price Thus, in the table given, prices vary by intervals of a half point from 90 to 110, thereafter by intervals of one point Had the price of our bond been 102 80 instead of 103, we could have determined by inspection that the yield of the bond was between 4 766– and 4 804, but we could have arrived at the correct yield only by interpolation Thus, for a 20-year, 5 per cent bond, selling at 102 80, the computations would be as follows

| | | |
|---|---|---|
| | 103 00 | 4 766 |
| | 102 50 | 4 804 |
| Differences | 50 | 038 |

That is, a difference of 50 in price makes a difference of 038 in yield By interpolation, the correct yield for a bond selling at 102 80 is

$$4\ 804 - 30/50 \times 038 = 4\ 7812 \text{ per cent}$$

Note that the price, 102 80, is 30/50 ( 6) of the entire distance, so to speak, from 102 50 to 103 00 This entire range in price represents a difference in yield of 038 per cent, 30/50 of the range, therefore, results in a difference of – 0228 per cent

This method of interpolation, even where computed with accuracy, is not entirely correct, for the intervals in price do not vary proportionately with intervals in yield The following section of the Sprague tables will illustrate this point These tables are used here because they are carried out further and indicate more clearly the above situation

In interpolating, by proportion, the assumption is that both intervals are constant The error is so small, however, that for all practical purposes it is not considered It is possible to correct this error by the method of differences [6]

**Interpolation for time.** Another complication is almost always

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[6] See Sprague, Charles E , *Extended Bond Tables* (New York The Ronald Press, 4th ed , 1915), p 121

## JOHNSON TABLE

Yields in per cent per annum,
correct to the nearest five ten-thousandths of one per cent,
interest payable semi-annually

**5% BOND**

| Price | 18 Years | 18½ Years | 19 Years | 19½ Years | 20 Years | 20½ Years | 21 Years | Current Income |
|---|---|---|---|---|---|---|---|---|
| **90** | 5 910- | 5 895 | 5 881- | 5 868- | 5 855 | 5 843 | 5 832- | 5 556- |
| **90½** | 5 861 | 5 847 | 5 834- | 5 821 | 5 809 | 5 798 | 5 787 | 5 525- |
| **91** | 5 813 | 5 800- | 5 787 | 5 775 | 5 764- | 5 753 | 5 743 | 5 495- |
| **91½** | 5 765 | 5 753- | 5 741- | 5 729 | 5 719- | 5 709- | 5 699 | 5 464 |
| **92** | 5 717 | 5 706- | 5 685- | 5 684 | 5 674 | 5 665- | 5 656- | 5 435- |
| **92½** | 5 670 | 5 659 | 5 649- | 5 639- | 5 630- | 5 621- | 5 612 | 5 405 |
| **93** | 5 623 | 5 613 | 5 603 | 5 594 | 5 586- | 5 577 | 5 570- | 5 376 |
| **93½** | 5 577- | 5 567 | 5 558 | 5 550- | 5 542- | 5 534 | 5 527- | 5 348- |
| **94** | 5 531- | 5 522- | 5 514- | 5 506- | 5 498 | 5 491 | 5 485- | 5 319 |
| **94½** | 5 485- | 5 477- | 5 469 | 5 462- | 5 455 | 5 449- | 5 443- | 5 291 |
| **95** | 5 439 | 5 432- | 5 425- | 5 418 | 5 412 | 5 407- | 5 401- | 5 263 |
| **95½** | 5 394- | 5 387 | 5 381 | 5 375 | 5 370- | 5 365- | 5 360- | 5 236- |
| **96** | 5 349- | 5 343 | 5 338- | 5 332 | 5 328- | 5 323- | 5 319- | 5 208 |
| **96½** | 5 304 | 5 299 | 5 294 | 5 290- | 5 286- | 5 282- | 5 278- | 5 181 |
| **97** | 5 260- | 5 256- | 5 251 | 5 248- | 5 244- | 5 240 | 5 237 | 5 155- |
| **97½** | 5 216- | 5 212 | 5 209- | 5 206- | 5 203- | 5 200- | 5 197- | 5 128 |
| **98** | 5 172 | 5 169 | 5 167- | 5 164- | 5 162- | 5 159 | 5 157 | 5 102 |
| **98½** | 5 129- | 5 126 | 5 124 | 5 123- | 5 121- | 5 119 | 5 117 | 5 076 |
| **99** | 5 085 | 5 084 | 5 083- | 5 081 | 5 080 | 5 079 | 5 078- | 5 051- |
| **99½** | 5 043- | 5 042- | 5 041 | 5 041- | 5 040- | 5 039 | 5 039- | 5 025 |
| **100** | 5 000 | 5 000 | 5 000 | 5 000 | 5 000 | 5 000 | 5 000 | 5 000 |
| **100½** | 4 958- | 4 958 | 4 959 | 4 960- | 4 960 | 4 961- | 4 961 | 4 975 |
| **101** | 4 916- | 4 917 | 4 918 | 4 920- | 4 921- | 4 922- | 4 923 | 4 950 |
| **101½** | 4 874- | 4 876 | 4 878 | 4 880- | 4 882- | 4 883 | 4 885- | 4 926 |
| **102** | 4 832 | 4 835 | 4 838- | 4 840 | 4 843- | 4 845 | 4 847 | 4 902- |
| **102½** | 4 791 | 4 795- | 4 798- | 4 801 | 4 804 | 4 807- | 4 810- | 4 878 |
| **103** | 4 750 | 4 754 | 4 758 | 4 762 | 4 766- | 4 769 | 4 772 | 4 854 |
| **103½** | 4 709 | 4 714 | 4 719 | 4 723 | 4 728- | 4 731 | 4 735 | 4 831- |
| **104** | 4 669 | 4 675- | 4 680- | 4 685- | 4 690- | 4 694 | 4 698 | 4 808- |
| **104½** | 4 629- | 4 635 | 4 641 | 4 647- | 4 652- | 4 657- | 4 662- | 4 785- |
| **105** | 4 589- | 4 596- | 4 602 | 4 609- | 4 614 | 4 620 | 4 625 | 4 762- |
| **105½** | 4 549 | 4 557- | 4 564 | 4 571- | 4 577 | 4 583 | 4 589 | 4 739 |
| **106** | 4 510- | 4 518 | 4 526- | 4 533 | 4 540 | 4 547- | 4 553 | 4 717- |
| **106½** | 4 471- | 4 479 | 4 488- | 4 496- | 4 504- | 4 511- | 4 518- | 4 695- |
| **107** | 4 432- | 4 441 | 4 450 | 4 459- | 4 467 | 4 475- | 4 482 | 4 673- |
| **107½** | 4 393- | 4 403 | 4 413- | 4 422 | 4 431- | 4 439- | 4 447- | 4 651 |
| **108** | 4 354 | 4 365 | 4 376- | 4 385 | 4 395- | 4 403 | 4 412- | 4 630- |
| **108½** | 4 316 | 4 328- | 4 339- | 4 349 | 4 350- | 4 368 | 4 377- | 4 608 |
| **109** | 4 278- | 4 290 | 4 302- | 4 313- | 4 323 | 4 333 | 4 342 | 4 587 |
| **109½** | 4 240 | 4 253 | 4 265 | 4 277- | 4 288- | 4 298 | 4 308 | 4 566 |
| **110** | 4 203- | 4 216 | 4 229- | 4 241 | 4 253- | 4 263 | 4 274- | 4 545 |
| **111** | 4 128- | 4 143- | 4 157- | 4 170 | 4 183- | 4 195- | 4 206 | 4 505- |
| **112** | 4 054 | 4 070 | 4 086- | 4 100 | 4 114- | 4 127- | 4 139 | 4 464 |
| **113** | 3 981 | 3 999- | 4 015 | 4 031- | 4 046- | 4 060- | 4 073 | 4 425- |
| **114** | 3 909 | 3 928 | 3 946- | 3 963- | 3 978 | 3 993 | 4 008- | 4 386- |
| **115** | 3 838 | 3 858 | 3 877 | 3 895- | 3 912- | 3 928- | 3 943 | 4 348- |
| **116** | 3 768- | 3 789 | 3 809 | 3 828 | 3 846- | 3 863- | 3 879 | 4 310 |
| **117** | 3 698 | 3 721- | 3 742- | 3 762- | 3 781- | 3 799- | 3 816- | 4 274- |
| **118** | 3 629 | 3 653- | 3 675 | 3 696 | 3 716 | 3 735 | 3 753 | 4 237 |
| **119** | 3 561 | 3 586 | 3 610- | 3 632- | 3 653- | 3 673- | 3 692- | 4 202- |
| **120** | 3 494- | 3 520- | 3 544 | 3 568- | 3 590- | 3 611- | 3 631- | 4 167- |
| **121** | 3 427 | 3 454 | 3 480 | 3 504 | 3 528- | 3 549 | 3 570 | 4 132 |
| **122** | 3 361 | 3 390- | 3 416 | 3 442- | 3 466- | 3 489- | 3 510 | 4 098 |
| **123** | 3 296- | 3 325 | 3 353 | 3 380- | 3 405- | 3 429- | 3 451 | 4 065 |
| **124** | 3 231 | 3 262- | 3 291- | 3 319- | 3 345- | 3 369 | 3 393- | 4 032 |
| **125** | 3 167 | 3 199 | 3 229 | 3 258- | 3 285- | 3 311- | 3 335- | 4 000 |
| **126** | 3 104- | 3 137- | 3 168 | 3 198- | 3 226- | 3 252 | 3 278- | 3 968 |
| **127** | 3 041 | 3 075 | 3 108- | 3 138 | 3 167 | 3 195- | 3 221- | 3 937 |
| **128** | 2 979 | 3 014 | 3 048- | 3 079 | 3 109 | 3 138- | 3 165- | 3 906 |
| **129** | 2 918- | 2 954 | 2 988 | 3 021 | 3 052 | 3 081 | 3 109 | 3 876- |
| **130** | 2 857- | 2 894 | 2 930- | 2 963 | 2 995 | 3 025 | 3 054 | 3 846 |

SECTION FROM SPRAGUE TABLES

(Values to Nearest Cent, of a Bond for $1,000,000 at 5 Per Cent Interest, Payable Semiannually)

| | | DERIVED BY AUTHOR | |
|---|---|---|---|
| *Net Yield* | *20 Years* | *Difference in Net Yield* | *Difference in Price* |
| 4 00 | $1,136,777 40 | — | — |
| 4 05 | 1,129,370 64 | 05 | $7,406 76 |
| 4 10 | 1,122,027 08 | 05 | 7,343 56 |
| 4 15 | 1,114,746 14 | 05 | 7,280 94 |
| 4 20 | 1,107,527 22 | 05 | 7,218 92 |
| 4 25 | 1,100,369 73 | 05 | 7,157 49 |
| 4 30 | 1,093,273 10 | 05 | 7,096 63 |

injected into the problem by the fact that the length of time the bond has to run to maturity rarely falls on an even six-month period Bond tables are worked out for six-month intervals, and not for days Thus, while one finds tables for bonds maturing in 6 months, 1 year, 1½ years, 2 years, and so on, most bonds mature at intervening periods These intervals make necessary an even further interpolation Assume that a 5 per cent bond, maturing on November 1, 1942, is quoted on August 16, 1927, at 102 75 The problem is to find the yield It is apparent that this bond does not mature in 15 years, but in 15 years, 2 months, and 15 days[7] In this case it is necessary to determine the yield of the bond both for a 15-year maturity and a 15½-year maturity The next step requires interpolation between these two yields to determine the yield of a bond running 15 years, 2 months, and 15 days For the computations here involved, we shall refer to the Sprague tables on pages 644 and 645 The price of our bond (102 75) falls between the prices 1,032,032 65 and 1,026,604 29 at 15 years The yields at these prices are, respectively, 4 70 and 4 75 per cent Interpolating, we have the following results·

| | | | |
|---|---|---|---|
| | 4 70 | | 1,032,032 65 |
| | 4 75 | | 1,026,604 29 |
| Yield Difference | 05 | Price Difference | 5,428 36 |
| | 4 70 | | 1,032,032 65 |
| | x | | 1,027,500 00 |
| | | | 4,532 65 |

$$x = 4\ 70 + \ 05\ \frac{4{,}532\ 65}{5{,}428\ 36}$$

---

[7] In computing the length of time bonds have to run one customarily assumes 30 days to the month, except in the case of very large transactions

$$
\begin{aligned}
&= 4\ 70 + 04175 \\
&= 4\ 74175
\end{aligned}
$$

Sımılarly, for a 15½-year bond

| | | | |
|---|---|---|---|
| | 4 70 | | 1,032,762 73 |
| | 4 75 | | 1,027,208 10 |
| Yıeld Dıfference | 05 | Prıce Dıfference | 5,554 63 |
| | 4 70 | | 1,032,762 73 |
| | x | | 1,027,500 00 |
| | | | 5,262 73 |

$$
\begin{aligned}
x &= 4\ 70 + 05\ \frac{5{,}262\ 73}{5{,}554\ 63} \\
&= 4\ 70 + 0474 \\
&= 4\ 7474
\end{aligned}
$$

The dıfference ın yıeld between a 15- and a 15½-year bond ıs as follows

| | |
|---|---|
| 15½-year bond | 4 74740 |
| 15 -year bond | 4 74175 |
| 180 days | 00565 |
| 75 days | x |

$$
\begin{aligned}
\frac{75}{180} \times 00565 &= x \\
x &= 00235
\end{aligned}
$$

Sınce ıt ıs true that the longer a premıum bond has to run the hıgher the yıeld ıs, and sınce our poınt of tıme ıs $\frac{75}{180}$ of the perıod between a 15- and 15½-year bond, we must add 00235 to the yıeld of a 15-year bond Our desıred result, therefore, ıs

| | |
|---|---|
| Yıeld of 15-year bond | 4 74175 |
| Plus dıfference for 75 days | 00235 |
| Yıeld for a 5 per cent bond runnıng 15 years and 75 days | 4 74410 |

**Ascertaınıng value of a bond when yıeld, coupon rate, and maturity are known** The converse sıtuatıon requıres the ınvestor to compute the value of a bond, when the yıeld at whıch ıt ıs to sell ıs known For example, suppose that the prıce of a 5 per cent bond runnıng 15 years, 2 months, 15 days, to yıeld 4 75, ıs requıred

## SPRAGUE TABLES

(Values, to the Nearest Cent, of a Bond for $1,000,000 at 5% Interest, Payable Semiannually)

| *Net Income* | 13 *Years* | 13½ *Years* | 14 *Years* | 14½ *Years* | 15 *Years* |
|---|---|---|---|---|---|
| 2 50 | 1 276 015 66 | 1 284 953 74 | 1 293 781 47 | 1 302 500 22 | 1 311 111 33 |
| 2 55 | 1 269 642 20 | 1 278 343 32 | 1 286 934 90 | 1 295 418 32 | 1 303 794 94 |
| 2 60 | 1 263 307 30 | 1 271 774 24 | 1 280 132 51 | 1 288 383 53 | 1 296 528 66 |
| 2 65 | 1 257 010 71 | 1 265 246 20 | 1 273 373 99 | 1 281 395 50 | 1 289 312 12 |
| 2 70 | 1 250 752 18 | 1 258 758 93 | 1 266 659 03 | 1 274 453 91 | 1 282 144 95 |
| 2 75 | 1 244 531 45 | 1 253 312 16 | 1 259 987 33 | 1 267 558 40 | 1 275 026 79 |
| 2 80 | 1 238 348 28 | 1 245 905 60 | 1 253 358 58 | 1 260 708 66 | 1 267 957 26 |
| 2 85 | 1 232 202 43 | 1 239 539 00 | 1 246 772 49 | 1 253 904 35 | 1 260 936 02 |
| 2 90 | 1 226 093 65 | 1 233 212 07 | 1 240 228 75 | 1 247 145 15 | 1 253 962 69 |
| 2 95 | 1 220 021 69 | 1 226 924 55 | 1 233 727 08 | 1 240 430 72 | 1 247 036 93 |
| 3 00 | 1 213 986 32 | 1 220 676 17 | 1 227 267 17 | 1 233 760 76 | 1 240 158 38 |
| 3 05 | 1 207 987 29 | 1 214 466 68 | 1 220 848 73 | 1 227 134 92 | 1 233 326 69 |
| 3 10 | 1 202 024 38 | 1 208 295 79 | 1 214 471 48 | 1 220 552 91 | 1 226 541 52 |
| 3 15 | 1 196 097 33 | 1 202 163 26 | 1 208 135 13 | 1 214 014 41 | 1 219 802 52 |
| 3 20 | 1 190 205 93 | 1 196 068 83 | 1 201 839 40 | 1 207 519 09 | 1 213 109 34 |
| 3 25 | 1 184 349 93 | 1 190 012 23 | 1 195 583 99 | 1 201 066 66 | 1 206 461 66 |
| 3 30 | 1 178 529 11 | 1 183 993 22 | 1 189 368 64 | 1 194 656 80 | 1 199 859 12 |
| 3 35 | 1 172 743 23 | 1 178 011 53 | 1 183 193 05 | 1 188 289 21 | 1 193 301 41 |
| 3 40 | 1 166 992 06 | 1 172 066 93 | 1 177 056 96 | 1 181 963 58 | 1 186 788 18 |
| 3 45 | 1 161 275 39 | 1 166 159 15 | 1 170 960 09 | 1 175 679 61 | 1 180 319 11 |
| 3 50 | 1 155 592 99 | 1 160 287 95 | 1 164 902 16 | 1 169 437 01 | 1 173 893 87 |
| 3 55 | 1 149 944 62 | 1 154 453 08 | 1 158 882 91 | 1 163 235 48 | 1 167 512 14 |
| 3 60 | 1 144 330 08 | 1 148 654 30 | 1 152 902 07 | 1 157 074 72 | 1 161 173 60 |
| 3 65 | 1 138 749 14 | 1 142 891 37 | 1 146 959 36 | 1 150 954 45 | 1 154 877 92 |
| 3 70 | 1 133 201 58 | 1 137 164 05 | 1 141 054 54 | 1 144 874 36 | 1 148 624 80 |
| 3 75 | 1 127 687 18 | 1 131 472 08 | 1 135 187 32 | 1 138 834 18 | 1 142 413 92 |
| 3 80 | 1 122 205 74 | 1 125 815 25 | 1 129 357 46 | 1 132 833 62 | 1 136 244 96 |
| 3 85 | 1 116 757 03 | 1 120 193 31 | 1 123 564 69 | 1 126 872 39 | 1 130 117 63 |
| 3 90 | 1 111 340 84 | 1 114 606 02 | 1 117 808 75 | 1 120 950 22 | 1 124 031 60 |
| 3 95 | 1 105 956 96 | 1 109 053 16 | 1 112 089 39 | 1 115 066 82 | 1 117 986 59 |
| 4 00 | 1 100 605 18 | 1 103 534 49 | 1 106 406 36 | 1 109 221 92 | 1 111 982 28 |
| 4 05 | 1 095 285 29 | 1 098 049 78 | 1 100 759 41 | 1 103 415 25 | 1 106 018 38 |
| 4 10 | 1 089 997 09 | 1 092 598 82 | 1 095 148 28 | 1 097 646 52 | 1 100 094 58 |
| 4 15 | 1 084 740 37 | 1 087 181 36 | 1 089 572 72 | 1 091 915 48 | 1 094 210 61 |
| 4 20 | 1 079 514 92 | 1 081 797 18 | 1 084 032 50 | 1 086 221 84 | 1 088 366 15 |
| 4 25 | 1 074 320 55 | 1 076 446 07 | 1 078 527 37 | 1 080 565 35 | 1 082 560 93 |
| 4 30 | 1 069 157 05 | 1 071 127 80 | 1 073 057 08 | 1 074 945 74 | 1 076 794 66 |
| 4 35 | 1 064 024 22 | 1 065 842 15 | 1 067 621 39 | 1 069 362 75 | 1 071 067 04 |
| 4 40 | 1 058 921 86 | 1 060 588 91 | 1 062 220 07 | 1 063 816 11 | 1 065 377 80 |
| 4 45 | 1 053 849 78 | 1 055 367 85 | 1 056 852 87 | 1 058 305 57 | 1 059 726 65 |
| 4 50 | 1 048 807 78 | 1 050 178 76 | 1 051 519 57 | 1 052 830 87 | 1 054 113 32 |
| 4 55 | 1 043 795 67 | 1 045 021 43 | 1 046 219 92 | 1 047 391 76 | 1 048 537 53 |
| 4 60 | 1 038 813 24 | 1 039 895 64 | 1 040 953 71 | 1 041 987 98 | 1 042 999 01 |
| 4 65 | 1 033 860 32 | 1 034 801 19 | 1 035 720 68 | 1 036 619 28 | 1 037 497 47 |
| 4 70 | 1 028 936 70 | 1 029 737 86 | 1 030 520 63 | 1 031 285 42 | 1 032 032 65 |
| 4 75 | 1 024 042 21 | 1 024 705 45 | 1 025 353 31 | 1 025 986 14 | 1 026 604 29 |
| 4 80 | 1 019 176 64 | 1 019 703 75 | 1 020 218 51 | 1 020 721 20 | 1 021 212 11 |
| 4 85 | 1 014 339 83 | 1 014 732 56 | 1 015 116 00 | 1 015 490 36 | 1 015 855 85 |
| 4 90 | 1 009 531 57 | 1 009 791 67 | 1 010 045 56 | 1 010 293 37 | 1 010 535 26 |
| 4 95 | 1 004 751 69 | 1 004 880 89 | 1 005 006 96 | 1 005 130 00 | 1 005 250 06 |
| 5 00 | 1 000 000 00 | 1 000 000 00 | 1 000 000 00 | 1 000 000 00 | 1 000 000 00 |

## SPRAGUE TABLES

(Values, to the Nearest Cent, of a Bond for $1,000,000 at 5% Interest, Payable Semiannually)

| *Net Income* | *15½ Years* | *16 Years* | *16½ Years* | *17 Years* | *17½ Years* |
|---|---|---|---|---|---|
| 2 50 | 1 319 616 13 | 1 328 015 93 | 1 336 312 03 | 1 344 505 71 | 1 352 598 23 |
| 2 55 | 1 312 066 09 | 1 320 233 12 | 1 328 297 33 | 1 336 260 01 | 1 344 122 45 |
| 2 60 | 1 304 569 26 | 1 312 506 67 | 1 320 342 22 | 1 328 077 22 | 1 335 712 95 |
| 2 65 | 1 297 125 21 | 1 304 836 13 | 1 312 446 22 | 1 319 956 79 | 1 327 369 15 |
| 2 70 | 1 289 733 55 | 1 297 221 06 | 1 304 608 84 | 1 311 898 22 | 1 319 090 50 |
| 2 75 | 1 282 393 87 | 1 289 661 03 | 1 296 829 62 | 1 303 900 99 | 1 310 876 43 |
| 2 80 | 1 275 105 78 | 1 282 155 60 | 1 289 108 09 | 1 295 964 58 | 1 302 726 41 |
| 2 85 | 1 267 868 88 | 1 274 704 35 | 1 281 443 77 | 1 288 088 51 | 1 294 639 89 |
| 2 90 | 1 260 682 79 | 1 267 306 84 | 1 273 836 22 | 1 280 272 27 | 1 286 616 33 |
| 2 95 | 1 253 547 11 | 1 259 962 66 | 1 266 284 96 | 1 272 515 36 | 1 278 655 19 |
| 3 00 | 1 246 461 46 | 1 252 671 39 | 1 258 789 54 | 1 264 817 28 | 1 270 755 95 |
| 3 05 | 1 239 425 45 | 1 245 432 61 | 1 251 349 53 | 1 257 177 57 | 1 262 918 07 |
| 3 10 | 1 232 438 72 | 1 238 245 91 | 1 243 964 46 | 1 249 595 73 | 1 255 141 04 |
| 3 15 | 1 225 500 88 | 1 231 110 88 | 1 236 633 90 | 1 242 071 28 | 1 247 424 34 |
| 3 20 | 1 218 611 56 | 1 224 027 12 | 1 229 357 40 | 1 234 603 74 | 1 239 767 47 |
| 3 25 | 1 211 770 39 | 1 216 994 23 | 1 222 134 54 | 1 227 192 66 | 1 232 169 90 |
| 3 30 | 1 204 977 00 | 1 210 011 81 | 1 214 964 89 | 1 219 837 57 | 1 224 631 15 |
| 3 35 | 1 198 231 04 | 1 203 079 46 | 1 207 848 00 | 1 212 537 99 | 1 217 150 72 |
| 3 40 | 1 191 532 13 | 1 196 196 79 | 1 200 783 47 | 1 205 293 48 | 1 209 728 10 |
| 3 45 | 1 184 879 93 | 1 189 363 41 | 1 193 770 86 | 1 198 103 58 | 1 202 362 82 |
| 3 50 | 1 178 274 07 | 1 182 578 94 | 1 186 809 77 | 1 190 967 83 | 1 195 054 38 |
| 3 55 | 1 171 714 21 | 1 175 843 00 | 1 179 899 78 | 1 183 885 81 | 1 187 802 31 |
| 3 60 | 1 165 200 00 | 1 169 155 20 | 1 173 040 48 | 1 176 857 05 | 1 180 606 14 |
| 3 65 | 1 158 731 08 | 1 162 515 18 | 1 166 231 46 | 1 169 881 12 | 1 173 465 38 |
| 3 70 | 1 152 307 12 | 1 155 922 55 | 1 159 472 32 | 1 162 957 60 | 1 166 379 58 |
| 3 75 | 1 145 927 77 | 1 149 376 96 | 1 152 762 66 | 1 156 086 04 | 1 159 348 26 |
| 3 80 | 1 139 592 70 | 1 142 878 02 | 1 146 102 08 | 1 149 266 03 | 1 152 370 98 |
| 3 85 | 1 133 301 57 | 1 136 425 38 | 1 139 490 20 | 1 142 497 13 | 1 145 447 27 |
| 3 90 | 1 127 054 05 | 1 130 018 68 | 1 132 926 62 | 1 135 778 93 | 1 138 576 68 |
| 3 95 | 1 120 849 80 | 1 123 657 57 | 1 126 410 95 | 1 129 111 01 | 1 131 758 77 |
| 4 00 | 1 114 688 51 | 1 117 341 67 | 1 119 942 82 | 1 122 492 96 | 1 124 993 10 |
| 4 05 | 1 108 569 84 | 1 111 070 66 | 1 113 521 84 | 1 115 924 37 | 1 118 279 22 |
| 4 10 | 1 102 493 47 | 1 104 844 16 | 1 107 147 64 | 1 109 404 84 | 1 111 616 69 |
| 4 15 | 1 096 459 08 | 1 098 661 85 | 1 100 819 84 | 1 102 933 96 | 1 105 005 10 |
| 4 20 | 1 090 466 36 | 1 092 523 37 | 1 094 538 07 | 1 096 511 33 | 1 098 444 01 |
| 4 25 | 1 084 514 99 | 1 086 428 39 | 1 088 301 97 | 1 090 136 57 | 1 091 932 99 |
| 4 30 | 1 078 604 66 | 1 080 376 56 | 1 082 111 17 | 1 083 809 27 | 1 085 471 63 |
| 4 35 | 1 072 735 05 | 1 074 367 56 | 1 075 965 31 | 1 077 529 06 | 1 079 059 51 |
| 4 40 | 1 066 905 87 | 1 068 401 05 | 1 069 864 04 | 1 071 295 54 | 1 072 696 22 |
| 4 45 | 1 061 116 81 | 1 062 476 70 | 1 063 806 99 | 1 065 108 33 | 1 066 381 35 |
| 4 50 | 1 055 367 55 | 1 056 594 19 | 1 057 793 82 | 1 058 967 07 | 1 060 114 49 |
| 4 55 | 1 049 657 82 | 1 050 753 18 | 1 051 824 18 | 1 052 871 36 | 1 053 895 24 |
| 4 60 | 1 043 987 30 | 1 044 953 37 | 1 045 897 72 | 1 046 820 84 | 1 047 723 21 |
| 4 65 | 1 038 355 70 | 1 039 194 43 | 1 040 014 10 | 1 040 815 15 | 1 041 597 99 |
| 4 70 | 1 032 762 73 | 1 033 476 04 | 1 034 172 98 | 1 034 853 91 | 1 035 519 21 |
| 4 75 | 1 027 208 10 | 1 027 797 90 | 1 028 374 01 | 1 028 936 77 | 1 029 486 46 |
| 4 80 | 1 021 691 51 | 1 022 159 68 | 1 022 616 88 | 1 023 063 36 | 1 023 499 37 |
| 4 85 | 1 016 212 70 | 1 016 561 09 | 1 016 901 23 | 1 017 233 33 | 1 017 557 56 |
| 4 90 | 1 010 771 36 | 1 011 001 81 | 1 011 226 76 | 1 011 446 32 | 1 011 660 64 |
| 4 95 | 1 005 367 22 | 1 005 481 55 | 1 005 593 12 | 1 005 702 00 | 1 005 808 24 |
| 5 00 | 1 000 000 00 | 1 000 000 00 | 1 000 000 00 | 1 000 000 00 | 1 000 000 00 |

| | |
|---|---|
| At 15½ years, the value is | 1,027,208 10 |
| At 15 years, the value is . | 1,026,604 29 |
| Differences for 6 mos. . | 603 81 |

$$\text{Difference for 75 days} = \frac{75}{180} \times 603\ 81$$
$$= 251\ 59$$

| Desired value | |
|---|---|
| Value for 15-year bond . . | 1,026,604 29 |
| Plus added value for 75 days | 251 59 |
| | 1,026,855 88 |

The method of proportion again is not absolutely accurate, for the amortization or accumulation for each day is taken as 1/180 of the half-year's total, although the interest proceeds by multiplication, and the multiplicand increases each day (The error is so slight that it may be ignored in everyday practice unless very large sums are being invested )

**Interpolation for time based on Equitable tables** The Equitable Trust Company Rapid Bond Tables are designed to facilitate interpolation between six-month periods These tables are constructed for bonds bearing interest at rates of 3, 3½, 4, 4½, 5, 6, and 7 per cent, and maturing in from six months to 50 years in half-yearly periods, with basic yields ranging from 3 per cent to 6 per cent, in advances of 5/100 of 1 per cent, with ⅛, ⅜, ⅝, and ⅞ differences

Each basic price is followed by the decimal difference to six places for one month, and also for one day, between each six-month period In this way it is very easy to establish the price basis of a bond that has other than an even number of years or half years to run On pages 648 and 649 is a section of these tables for bonds maturing in 20 years At what price will a 5 per cent bond having 20 years, 3 months, and 6 days to run sell to yield 5 60?

| | | |
|---|---|---|
| Price for a 20-year bond | | 92 83580 |
| 016116 × 3 (mos ) | 048348 | |
| 000537 × 6 (days) | 003222 | |
| Subtract | | 05157 |
| Price for a bond maturing in 20 years, 3 mos , and 6 days | | 92 78423 |

In the case of a premium bond, of course, it becomes necessary to add the difference, for the longer such a bond has to run to maturity, the greater the premium must be to effect a given yield On the other hand, in the case of a discount bond, the longer the bond runs to maturity, the greater is the discount At what price must a 6 per cent bond, having 20 years, 3 months, and 6 days to run, sell to yield 5 60?

| | | |
|---|---|---|
| Price for a 20-year bond | | 104 7761 |
| 010750 × 3 (mos ) | 032250 | |
| 000358 × 6 (days) | 002148 | |
| Add | | 034398 |
| Price for a bond maturing in 20 years, 3 mos , and 6 days | | 104 810498 |

**Bonds of optional duration** Many bonds that have a definite maturity date are nevertheless redeemable before maturity at the option of the issuing company The terms under which redemption may take place are various They may be callable any time after issuance, at a specified date, before a definite date, between certain dates, or on and after a stated date They may be called at par or at a premium All these matters, of course, may have an effect on value or yield

Inasmuch as the length of time the bond has to run is the variable quantity, the problem is to find whether the earliest or latest maturity should be used in computing the price or the return Within certain limits, the interests of the borrower and lender are antagonistic, and the option of payment lies with the borrower Consequently, the lender should adopt the most conservative basis of computation and figure the value of or the return from his investment on the least favorable basis The rule employed is to compute the yield upon the basis of that maturity option that is least favorable to the bondholder

**Rule for computing bonds redeemable at par** If the cost of the bond and the redemption price are both 100, or par, then the duration is of no consequence, for both the coupon rate and the effective yield are the same

If the cost is below par—that is, if the bond is purchased at a discount—and the redemption price is par, then the longer the duration, the less the yield The investor, therefore, should compute his yield on the basis of ultimate maturity

Conversely, when the cost is above par, or at a premium, and the bonds are redeemable at par, then the longer the bonds run,

## EQUITABLE BOND TABLES

20 Years

Interest Payable Semiannually

| % Per Annum | 3% | 3½% | 4% | 4½% | 5% | 6% | 7% | % Per Annum |
|---|---|---|---|---|---|---|---|---|
| 4 50 | 80 3549<br>050216<br>001673 | 86 9032<br>033466<br>001115 | 93 4516<br>016733<br>000557 | 100 0000 | 106 5484<br>016733<br>000557 | 119 6451<br>050216<br>001673 | 132 7419<br>083666<br>002788 | 4 50 |
| 4 55 | 79 7870<br>051366<br>001712 | 86 3073<br>034783<br>.001159 | 92 8276<br>018216<br>000607 | 99 3480<br>001666<br>000055 | 105 8683<br>014916<br>000497 | 118 9090<br>048033<br>001601 | 131 9496<br>081183<br>002706 | 4 55 |
| 4 60 | 79 2241<br>052483<br>001749 | 85 7166<br>036083<br>001202 | 92 2090<br>019666<br>000655 | 98 7015<br>003283<br>000109 | 105 1940<br>013116<br>000437 | 118 1789<br>045916<br>001530 | 131 1638<br>078733<br>002624 | 4 60 |
| 4⅝ | 78 9446<br>053033<br>001767 | 85 4232<br>036716<br>001223 | 91 9018<br>020400<br>000680 | 98 3804<br>004083<br>000136 | 104 8589<br>012250<br>000408 | 117 8161<br>044883<br>001496 | 130 7733<br>077516<br>002583 | 4⅝ |
| 4 65 | 78 6663<br>053600<br>001786 | 85 1310<br>037350<br>001245 | 91 5958<br>021116<br>000703 | 98 0606<br>004883<br>000162 | 104 5253<br>011366<br>000378 | 117 4549<br>043833<br>001461 | 130 3844<br>076316<br>002543 | 4 65 |
| 4 70 | 78 1134<br>054666<br>001822 | 84 5506<br>038583<br>001286 | 90 9879<br>022516<br>000750 | 97 4251<br>006433<br>.000214 | 103 8623<br>009650<br>000321 | 116 7368<br>041800<br>001393 | 129 6113<br>073950<br>002465 | 4 70 |
| 4 75 | 77 5654<br>055716<br>001857 | 83 9753<br>039800<br>001326 | 90 3852<br>023883<br>000796 | 96 7951<br>007966<br>000265 | 103 2049<br>007966<br>000265 | 116 0247<br>039800<br>001326 | 128 8445<br>074633<br>002387 | 4 75 |
| 4 80 | 77 0222<br>056733<br>001891 | 83 4049<br>040966<br>001365 | 89 7877<br>025216<br>000840 | 96 1704<br>000466<br>000315 | 102 5531<br>006300<br>000210 | 115 3185<br>037816<br>001260 | 128 0840<br>069333<br>002311 | 4 80 |
| 4 85 | 76 4839<br>057733<br>001924 | 82 8396<br>042116<br>001403 | 89 1953<br>026516<br>000883 | 95 5510<br>010916<br>000363 | 101 9067<br>004683<br>000156 | 114 6181<br>035883<br>001196 | 127 3295<br>067083<br>002236 | 4 85 |
| 4⅞ | 76 2165<br>058216<br>001940 | 82 5588<br>042700<br>001423 | 88 9010<br>027166<br>000905 | 95 2433<br>011650<br>000388 | 101 5856<br>003883<br>000129 | 114 2701<br>034933<br>001164 | 126 9546<br>065983<br>002199 | 4⅞ |
| 4 90 | 75 9503<br>058700<br>001956 | 82 2792<br>043250<br>001441 | 88 6080<br>027800<br>000926 | 94 9369<br>012250<br>000411 | 101 2658<br>003083<br>000102 | 113 9235<br>033983<br>001132 | 126 5813<br>064866<br>002162 | 4 90 |
| 4 95 | 75 4214<br>059633<br>001987 | 81 7236<br>044350<br>001478 | 88 0258<br>029050<br>000968 | 94 3280<br>013766<br>000458 | 100 6302<br>001533<br>000051 | 113 2346<br>032116<br>001070 | 125 8390<br>062700<br>002090 | 4 95 |
| 5 00 | 74 8972<br>060550<br>002018 | 81 1729<br>045416<br>001513 | 87 4486<br>030283<br>001009 | 93 7243<br>015133<br>000504 | 100 0000 | 112 5514<br>030283<br>001009 | 125 1028<br>060550<br>002018 | 5 00 |
| 5 05 | 74 3776<br>061450<br>002048 | 80 6270<br>046466<br>001548 | 86 8764<br>031483<br>001049 | 93 1257<br>016483<br>000549 | 99 3751<br>001500<br>000050 | 111 8738<br>028466<br>000948 | 124 3725<br>058450<br>001948 | 5 05 |
| 5 10 | 73 8627<br>062333<br>002077 | 80 0858<br>047483<br>001582 | 86 3090<br>032650<br>001088 | 92 5322<br>017816<br>000593 | 98 7554<br>002966<br>000098 | 111 2017<br>026716<br>000890 | 123 6481<br>056383<br>001879 | 5 10 |
| 5⅛ | 73 6069<br>062766<br>002092 | 79 8170<br>047983<br>001599 | 86 0272<br>033233<br>001107 | 92 2373<br>018450<br>000615 | 98 4475<br>003700<br>000123 | 110 8678<br>025833<br>000861 | 123 2881<br>055366<br>001845 | 5⅛ |
| 5.15 | 73 3522<br>063183<br>002106 | 79 5494<br>048500<br>001616 | 85 7465<br>033783<br>001126 | 91 9437<br>019100<br>000636 | 98 1409<br>004416<br>000147 | 110 5352<br>024966<br>000832 | 122 9295<br>054366<br>001812 | 5 15 |
| 5 20 | 72 8462<br>064000<br>002133 | 79 0175<br>049450<br>001648 | 85 1889<br>034916<br>001163 | 91 3602<br>020366<br>000678 | 97 5315<br>005816<br>000193 | 109 8741<br>023266<br>000775 | 122 2167<br>052366<br>001745 | 5 20 |
| 5.25 | 72 3447<br>064800<br>002160 | 78 4903<br>050400<br>001680 | 84 6359<br>036000<br>001200 | 90 7816<br>021600<br>000720 | 96 9272<br>007200<br>000240 | 109 2184<br>021600<br>000720 | 121 5097<br>050400<br>001680 | 5 25 |
| % Per Annum | 3% | 3½% | 4% | 4½% | 5% | 6% | 7% | % Per Annum |

Interest Payable Semiannually

20 Years

## EQUITABLE BOND TABLES

### 20 YEARS

Interest Payable Semiannually

| % Per Annum | 3% | 3½% | 4% | 4½% | 5% | 6% | 7% | % Per Annum |
|---|---|---|---|---|---|---|---|---|
| 5 25 | 72 3447<br>064800<br>002160 | 78 4903<br>050400<br>001680 | 84 6359<br>036000<br>001200 | 90 7816<br>021600<br>000720 | 96 9272<br>007200<br>000240 | 109 2184<br>021600<br>000720 | 121 5097<br>050400<br>001680 | 5 25 |
| 5 30 | 71 8476<br>065583<br>002186 | 77 9677<br>051333<br>001711 | 84 0878<br>037083<br>001236 | 90 2079<br>022816<br>000760 | 96 3279<br>008550<br>000285 | 108 5681<br>019966<br>000665 | 120 8083<br>048483<br>001616 | 5 30 |
| 5 35 | 71 3548<br>066333<br>002211 | 77 4496<br>052233<br>001741 | 83 5443<br>038116<br>001270 | 89 6390<br>024000<br>000800 | 95 7337<br>009883<br>000329 | 107 9231<br>018350<br>000611 | 120 1126<br>046583<br>001552 | 5 35 |
| 5⅜ | 71 1101<br>066716<br>002223 | 77 1922<br>052683<br>001756 | 83 2743<br>038633<br>001287 | 89 3563<br>024566<br>000818 | 95 4384<br>010533<br>000351 | 107 6026<br>017566<br>000585 | 119 7668<br>045650<br>001521 | 5⅜ |
| 5 40 | 70 8664<br>067083<br>002236 | 76 9359<br>053100<br>001770 | 83 0054<br>039133<br>001304 | 89 0749<br>025150<br>000838 | 95 1444<br>011183<br>000372 | 107 2834<br>016766<br>000558 | 119 4224<br>044716<br>001490 | 5 40 |
| 5 45 | 70 3823<br>067816<br>002260 | 76 4267<br>053966<br>001798 | 82 4711<br>040116<br>001337 | 88 5156<br>026300<br>000876 | 94 5600<br>012450<br>000415 | 106 6489<br>015216<br>000507 | 118 7377<br>042900<br>001430 | 5 45 |
| 5 50 | 69 9024<br>068500<br>002283 | 75 9219<br>054800<br>001826 | 81 9414<br>041100<br>001370 | 87 9609<br>027400<br>000913 | 93 9805<br>013700<br>000456 | 106 0195<br>013700<br>000456 | 118 0586<br>041100<br>001370 | 5 50 |
| 5 55 | 69 4267<br>069183<br>002306 | 75 4214<br>055600<br>001853 | 81 4162<br>042050<br>001401 | 87 4110<br>028483<br>000949 | 93 4058<br>014933<br>000497 | 105 3953<br>012200<br>000406 | 117 3848<br>039350<br>001311 | 5 55 |
| 5 60 | 68 9551<br>069833<br>002327 | 74 9253<br>056400<br>001880 | 80 8955<br>042983<br>001432 | 86 8656<br>029533<br>000984 | 92 8358<br>016116<br>000537 | 104 7761<br>010750<br>000358 | 116 7165<br>037600<br>001253 | 5 60 |
| 5⅝ | 68 7209<br>070150<br>002338 | 74 6783<br>056783<br>001892 | 80 6367<br>043416<br>001447 | 86 5947<br>030066<br>001002 | 92 5526<br>016700<br>000556 | 104 4684<br>010033<br>000334 | 116 3843<br>036750<br>001225 | 5⅝ |
| 5 65 | 68 4877<br>070466<br>002348 | 74 4334<br>057166<br>001905 | 80 3791<br>043866<br>001462 | 86 3249<br>030583<br>001019 | 92 2706<br>017283<br>000576 | 104 1620<br>009300<br>000310 | 116 0534<br>035900<br>001196 | 5 65 |
| 5 70 | 68 0244<br>071100<br>002370 | 73 9458<br>057933<br>001931 | 79.8672<br>044766<br>001492 | 85 7836<br>031600<br>001053 | 91 7100<br>008433<br>000614 | 103 5529<br>007883<br>000262 | 115 3957<br>034233<br>001141 | 5 70 |
| 5 75 | 67 5651<br>071700<br>002390 | 73 4623<br>058650<br>001955 | 79 3596<br>045616<br>001520 | 85 2568<br>032583<br>001086 | 91 1541<br>019550<br>000651 | 102 9486<br>006516<br>000217 | 114 7432<br>032583<br>001086 | 5 75 |
| 5 80 | 67 1098<br>072266<br>002408 | 72 9830<br>059366<br>001978 | 78 8563<br>046466<br>001548 | 84 7295<br>033550<br>001118 | 90 6028<br>020650<br>000688 | 102 3493<br>005166<br>000172 | 114 0958<br>030966<br>001032 | 5 80 |
| 5 85 | 66 6584<br>072833<br>002427 | 72 5087<br>060200<br>002006 | 78 3572<br>047266<br>001575 | 34 2066<br>034500<br>001150 | 90 0560<br>021716<br>000723 | 101 7548<br>003833<br>000127 | 113 4536<br>029383<br>000979 | 5 85 |
| 5⅞ | 66 4342<br>073100<br>002436 | 72 2718<br>060400<br>002013 | 78 1093<br>047683<br>001589 | 83 9468<br>034966<br>001165 | 89 7843<br>022250<br>000741 | 101 4594<br>003183<br>000106 | 113 1344<br>028616<br>000953 | 5⅞ |
| 5 90 | 66 2110<br>073366<br>002445 | 72 0367<br>060716<br>002023 | 77 8624<br>048066<br>001602 | 83 6881<br>035416<br>001180 | 89 5138<br>022783<br>000759 | 101 1651<br>002533<br>000084 | 112 8165<br>027833<br>000927 | 5 90 |
| 5 95 | 65 7675<br>073900<br>002463 | 71 5696<br>061366<br>002045 | 77 3717<br>048833<br>001627 | 83 1739<br>036333<br>001211 | 88 9760<br>023800<br>000793 | 100 5802<br>001250<br>000041 | 112 1844<br>026316<br>000877 | 5 95 |
| 6 00 | 65 3278<br>074400<br>002480 | 71 1065<br>062000<br>002066 | 76 8852<br>049600<br>001653 | 82 6639<br>037200<br>001240 | 88 4426<br>024800<br>000826 | 100 0000 | 111 5574<br>024800<br>000826 | 6 00 |
| % Per Annum | 3% | 3½% | 4% | 4½% | 5% | 6% | 7% | % Per Annum |

Interest Payable Semiannually

20 YEARS

the greater is the yield Therefore, in such cases, it is proper to assume the shortest time the bond may run

**Rule for computing bonds redeemable at a premium** When the redemption, or call price, of a bond is at a premium, and the cost of the bond is at a discount, at par, or at a premium not greater than that at which the bond is redeemable, the lower yield will result from the assumption that the bond will be paid at maturity However, if the cost price is above the redemption price, it will be necessary to compute the net yield on both the final and the optional maturity bases in order to ascertain which one of the two bases gives the lower yield basis, and hence which one is the basis upon which the rate of the return is computed

**Computation of yields for serial issues** In buying an issue of bonds known as "serials," where a certain portion of the issue matures periodically, investment dealers sometimes average the life of the issue and then, by the use of bond tables, base their computations on the average maturity A more accurate method requires that a separate price be computed for each maturity, and the average of these prices taken The error in the first method arises from the fundamental principle that the net return on a bond is based on the reinvestment at compound interest of a certain portion of the coupons as they severally become due Each maturity of a serial issue must be computed separately, in order that this principle of compounding the interest may have its own application

**Accrued interest.** Stocks are ordinarily quoted "flat"—that is, the price includes the price of the stock plus any "accrued dividends" This is invariably the rule for stocks sold on the New York Stock Exchange New issues of preferred stocks that are offered by investment bankers, however, may be quoted "and accrued dividends" Bonds not in default are generally quoted "and accrued interest," whereas bonds in default and income bonds are usually quoted flat, any accrued interest being included in the price Where bonds are quoted "and accrued interest," it is necessary to make a further adjustment before the actual price to the purchaser is obtainable Thus, let us assume that on the first of September, a purchase is made of a 20-year, 5 per cent bond at 113 68 and accrued interest, the interest dates of which are January 1 and July 1. The purchaser will pay $1,136 80, which is the principal and premium of the bond, and also the interest on $1,000, the face value of the bond, from July 1 to September 1 at 5 per cent This interest amounts to $8 33 on a $1,000 bond In other words, the coupon, which matures the following January 1, to the amount of $25, may be said to begin to ripen immediately after July 1. On September 1, the coupon has acquired a value of one third of the total coupon, or $8.33. The purchaser, therefore, pays $1,136.80, plus $8.33, or $1,145.13. This payment for accrued interest is not regarded as a part of the principal invested but as an advance to obtain the partly earned coupon. It is subtracted from the amount of the coupon upon the receipt of the latter, in order to show the net interest income actually earned by the purchaser, in this case for the period between September 1 and January 1.

**Computation of yields for bonds sold flat.** It is sometimes desired to ascertain what a bond will yield at a given price when sold flat (which means that the purchaser pays no accrued interest). A 20-year bond, bearing 5 per cent interest, payable semiannually, February and August, is offered for sale on April 1, at 115 flat. What is the effective yield? The first problem is to find out how much interest has actually accrued on the bond. In this case it is two months' interest, or again $8.33. Deducting this amount from the price of the bond, we obtain $1,141.67 (114.17 at 2 decimals). It may be said then that a quotation of 114.17 and accrued interest is equivalent to a quotation of 115 flat. It then becomes necessary to determine the yield of a 20-year, 5 per cent bond selling at 114.17.

**Segregation of income and principal of investments in estate accounting.** In the handling of bond accounts of trust estates, questions often arise as to the relative interests of the life tenant and the remainderman.[8] Where funds are placed in the form of a trust, from which the *income* goes to one party during his or her life, and the principal to the remainderman at the death of the life tenant, two distinct problems exist. The maximum income should be produced in the interest of the life tenant, yet the principal must be maintained intact. Where bonds are purchased at par at the beginning of the trust, there is no question as to what constitutes income and what constitutes principal. On the other hand, a bond purchased at a premium must be amortized, so that at maturity the par value plus the amortization will equal the original value. In other words, a part of the interest received from premium bonds must be put into a fund before payment is made to the life tenant, the fund to grow to an amount equal to the premium at the time the bond is paid.

Conversely, bonds purchased at a discount enjoy income from accumulation as well as from interest Theoretically, the life tenant should receive the benefit of such accumulation In practice, the segregation of income from principal is somewhat involved and is often neglected, or else the problem is met by the purchase of approximately an equal amount of premium and discount bonds Sometimes trustees follow the simple and crude, but conservative, rule of ignoring discount as income but charging off any premiums against current income at the time the bond is purchased

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[8] The life tenant is the beneficiary of a trust fund who receives the income during his lifetime, the remainderman is the party who is entitled to the body, or principal, of the fund upon the termination of the life interest. The problem of individual trust funds is discussed in Chapter 27.

Where income and principal are to be accurately segregated, however, it is desirable to use schedules of amortization and accumulation[9] The general principle involved may be stated as follows "The cost of the bonds equals the principal or par value plus the premium, or minus the discount " "The premium or discount of a bond, bought above or below par, is the present worth of an annuity of the difference of the rates "

**Premium bond.** To cover briefly the entire mathematical history of a loan, let us assume a 6 per cent, 4-year, semi-annual bond, with a par value of $1,000, issued February 1, 1934, and bought to yield 4½ per cent. The results appear in the following table·

| *Date* | *Cash Interest* | *Net Income* | *Amortization* | *Book Value* |
|---|---|---|---|---|
| 1934 Feb 1 (cost) | — | — | — | $1,054 40 |
| Aug 1 | $30 00 | $23 70 | $6 30 | 1,048 10 |
| 1935 Feb 1 | 30 00 | 23 60 | 6 40 | 1,041 70 |
| Aug 1 | 30 00 | 23 40 | 6 60 | 1,035 10 |
| 1936 Feb 1 | 30 00 | 23 30 | 6 70 | 1,028 40 |
| Aug 1 | 30 00 | 23 10 | 6 90 | 1,021 50 |
| 1937 Feb 1 | 30 00 | 23 00 | 7 00 | 1,014 50 |
| Aug 1 | 30 00 | 22 80 | 7 20 | 1,007 30 |
| 1938 Feb 1 | 30 00 | 22 70 | 7 30 | 1,000 00 |

The original cost of $1,054 40 is multiplied by one half of the annual yield rate, 4 50 per cent, to obtain the net income of $23 70 for the first half year The amount by which the coupon of $30 exceeds the income is $6 30 and represents a return of a part of the principal tied up in the original investment in premium With so much principal returned, the book value of the bond is written down to $1,048 10, and the $6 30 is reinvested Any income received from such investment will take the place of the decreasing income from the bond In the second half year, the yield rate is applied to the reduced book value to obtain the net income figure of $23 60 for that period Following down the net income column, one notes the various amounts to which the life tenant is entitled, or which may be considered as true income The person entitled to the fund at the death of the life tenant is protected by the amortization fund At any interest date the book value, which is the investment, will, when added to the accumulated sums that have been laid aside, equal the original capital

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[9] For a complete discussion of various schedules of amortization and accumulation, the reader is referred to Sprague, Charles E, and Perrine, L L., *The Accountancy of Investment* (New York. The Ronald Press, 1922) See particularly Chapter XI

**Discount bonds.** Bonds purchased at a discount are treated in a similar fashion, except that the coupon rate *plus* the accumulation equals the true income Thus, suppose a 3 per cent, 4-year, semiannual bond with a par value of $1,000 were issued February 1, 1934, at a price to net 4½ per cent It is worth $945 60 at the time of purchase, and its history is a follows

| Date | *Cash Interest 3%* | *Net Income 4½%* | *Accumulation* | *Book Value* |
|---|---|---|---|---|
| 1934 Feb 1 (cost) | — | — | — | $ 945 60 |
| Aug 1 | $15 00 | $21 30 | $6 30 | 951 90 |
| 1935 Feb 1 | 15 00 | 21 40 | 6 40 | 958 30 |
| Aug 1 | 15 00 | 21 60 | 6 60 | 964 90 |
| 1936 Feb 1 | 15 00 | 21 70 | 6 70 | 971 60 |
| Aug 1 | 15 00 | 21 90 | 6 90 | 978 50 |
| 1937 Feb 1 | 15 00 | 22 00 | 7 00 | 985 50 |
| Aug 1 | 15 00 | 22 20 | 7 20 | 992 70 |
| 1938 Feb 1 | 15 00 | 22 30 | 7 30 | 1,000 00 |

**Stock dividends, recurring and special** A similar problem of distinguishing between principal and income arises in connection with stock dividends or dividends paid out as a distribution of assets—liquidating dividends, so to speak In such cases it is essential that the principal shall be kept intact, while all remaining income is paid to the life tenant Let us illustrate this case by a simple example *A* died in 1920 and left $500,000 of stock in corporation *X*, in a life trust for the benefit of *B*, after whose death the principal goes to *C* The corporation pays regular dividends of 6 per cent from 1920 until 1925, at which time a special 50 per cent cash dividend is declared out of surplus The question is "To how much of this dividend is *B* entitled?" We shall assume the following balance sheet for corporation X at the time of *A's* death (1920), and in 1925

*1920*

| | | | |
|---|---|---|---|
| Assets . . . . | $4,000,000 | Liabilities | $1,500,000 |
| | | Capital | 2,000,000 |
| | | Surplus | 500,000 |
| | $4,000,000 | | $4,000,000 |

*1925*

| | | | |
|---|---|---|---|
| Assets . . . . | $7,500,000 | Liabilities | $4,250,000 |
| | | Capital | 2,000,000 |
| | | Surplus | 1,250,000 |
| | $7,500,000 | | $7,500,000 |

From the above data it is seen that the $500,000 of stock left in trust amounted to one fourth of the entire issue outstanding, and therefore was entitled to a quarter interest in the $500,000 surplus carried on the books at that time The book value of the stock, based on the 1920 balance sheet, was thus $625,000, which must be kept intact for the remainderman The payment of a 50 per cent cash dividend in 1925 would affect the balance sheet of the corporation in the following manner

| | | | |
|---|---|---|---|
| Assets | $6,500,000 | Liabilities | $4,250,000 |
| | | Capital | 2,000,000 |
| | | Surplus | 250,000 |
| | $6,500,000 | | $6,500,000 |

Such a payment reduces the book value of the $500,000 of stock in the trust fund from an original value of $625,000 to $562,500 It is necessary, therefore, to retain $62,500 of the $250,000 cash due to the trust holding, as a result of the dividend, in the trust fund, otherwise an impairment of principal will result [10]

The principle here involved is clearly set forth in an important New York case [11]

> 1 Ordinary dividends, regardless of the time when the surplus out of which they are payable was accumulated, should be paid to the life beneficiary of the trust
>
> 2 Extraordinary dividends, payable from the accumulated earnings of the Company, whether payable in cash or in stock, belong to the life beneficiary unless they encroach in whole or in part upon the capital of the trust fund as received from the testator or maker of the trust or invested in stock, in which case such extraordinary dividends should be returned to the trust fund or apportioned between the trust fund and the life beneficiary in such a way as to preserve the integrity of the trust fund

**Determination of stock yields.** The problem of determining stock yields is very much simpler than that of bond yields, for there is no return of principal—at least there is no promised date at which the principal comes due In order to ascertain the yield on stock at any price, therefore, it is necessary only to divide the current dividend rate by the price at which the stock is selling A stock that is selling at 90 and paying $7 a year thus yields 7 7 per cent This rate is called the stock or current yield Unlike the fixed interest return upon a bond, the dividend rate for common stock is variable It fluctuates largely with earnings and is determined at the discretion of the board of directors In the computation of the yield on common stock, therefore, the result must be clearly thought of as a current, and not as a fixed, yield

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[10] For a more extended treatment of this problem and allied problems, see Finney, H A, *Principles of Accounting* (New York Prentice Hall, Inc, rev ed, 1934), Vol II, Chapters 55 and 56

[11] In re Osborne, 209 N. Y 450

**Mathematics of convertible securities** Where a security carries with it the right of conversion into another security, it frequently becomes necessary to compute the ratio of conversion and to determine whether conversion is profitable The various types of convertible issues, as well as some of the mathematics of conversion, have already been considered[12] Where conversion is on a par for par basis, the operation is a relatively simple matter, for, when the price of the "conversion" security[13] is above that of the security that is convertible, conversion is profitable Convertible securities may be said to have two values the one a purely investment value, the other arising from the conversion privilege The value of a convertible security will not go below its investment value, regardless of the value of the conversion security On the other hand, the value of a convertible security may go substantially above its investment value, if the price of the conversion security so warrants

The mathematics of conversion is somewhat more complicated when the conversion ratio is other than par for par Let us assume that the bonds of corporation *A* are convertible into its common stock at 110 This means that bonds may be used to purchase the common stock of the corporation and that it takes $110 *par value* of bonds to purchase $100 *par value* of stock The conversion ratio is not expressed in terms of market values, but market values determine whether or not conversion is profitable Let us assume further that the bonds have an independent investment value of 96, that is, as an investment without reference to the conversion privilege, they are worth 96 The stock, we shall assume, is quoted at 105 Will the conversion privilege here raise the value of the bonds above their investment value? This question can be answered by determining whether the stock can be purchased more cheaply with cash or with bonds at 96. Bonds of $110 par value, worth at market price $96 × 110 per cent, or $105.60, will purchase $105 worth of stock. It can hardly be said at this point that the conversion privilege would have any effect on the price of the bonds; however, at that level, some investors would be likely to anticipate a rise in the price of the stock and bid up the bonds. Let us suppose that the price of the stock advances to 120. Will the bonds, valued on their conversion basis, be above or below their investment value? Bonds at $110 *par value* equal stock at $120 *market value*. The market value of the bonds should at least equal 120 ÷ 110 per cent, or 109.09; otherwise, speculators would purchase the bonds, convert them into stock, and sell the stock at 120, thus making a profit through such arbitrage operations. Since the price of 109.09 is in excess of 96, or investment value, it may be said that the conversion privilege has raised the price of the bonds by the amount of the difference.[14]

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[12] See Chapter 3

[13] Used to denote the security into which the convertible security may be converted

The methods by which various companies handle conversion differ. Some companies charge the investor accumulated interest, or dividends, on the new security and credit accrued interest, or dividends, on the old. In other cases, no adjustment is made, the securities being exchanged on a flat basis.[15] This method may operate slightly to the disadvantage of the investor who converts, where interest has accrued on the convertible security but not on the conversion issue. In such cases a further slight adjustment should appear in market prices; this adjustment will cause prices to vary slightly from their stated conversion values.

**Subscription rights.** The mathematics of subscription rights has already been discussed at some length and need be reviewed only briefly at this point.[16] Corporations that increase their capital stock are ordinarily required to allow present stockholders the first rights to subscribe thereto; otherwise it would be possible to disturb the relative distribution of the present equities in a corporation and to shift the control of the company through new stock issues. When stock is so offered, the present stockholders are allowed to subscribe to the new issue in proportion to their present holdings and on equal terms. Often the subscription price is below the current market price. Thus, let us assume that corporation $A$, with $1,000,000 of capital stock outstanding, par $100, decides to increase its stock to $1,250,000  The current market for its stock is 130  The new stock, however, is offered to the stockholders at 100, in the proportion of one share of new stock for every four shares of old stock held  What is the value of the rights going with a share of old stock?

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[14] For further examples of convertible securities, see Chapter 3.

[15] Interest is included in the price.

[16] See p. 145. For a more extended discussion, see Guthmann, H. G., and Dougall, H. E., *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 2d ed., 1948), Chapter 16.

Let $x$ = the required value
$P$ = the difference between market value and subscription price (in this case 30)
$R$ = the percentage rate of increase (in this case 25 per cent)

Then

$$x = \frac{P \times R}{R+1} \text{ or } \frac{30 \times 25}{25+1}$$
$$= \$6$$

**Stock dividends**  The declaration of stock dividends gives rise to some minor questions of a mathematical nature, but if one regards them as a capitalization of surplus, there will be no confusion  The declaration of a stock dividend, *per se,* does not in any way affect the proportionate participation of the stockholder in the corporation, nor does the corporation thereby pay out any of its assets  In its simplest form, the changes in the accounts of a corporation resulting from the declaration of a stock dividend may appear as follows

BALANCE SHEET OF CORPORATION X

| | | | |
|---|---|---|---|
| Assets | $1,000,000 | Common stock (par $100) | $ 300,000 |
| | | Liabilities | 400,000 |
| | | Surplus | 300,000 |
| | $1,000,000 | | $1,000,000 |

Let us assume that the corporation elects to pay a 50 per cent stock dividend  Such a dividend results in an increase in the capital stock item of $150,000 and a decrease in surplus of a similar amount  In other words, the balance sheet, after payment of the dividend, will take the following form

| | | | |
|---|---|---|---|
| Assets | $1,000,000 | Common stock (par $100) | $ 450,000 |
| | | Liabilities | 400,000 |
| | | Surplus | 150,000 |
| | $1,000,000 | | $1,000,000 |

If the dividend rate on the old stock is maintained for the new stock, or if the dividend rate is not reduced proportionately, an increased return results for the stockholder  Otherwise, the position of the stockholder is not substantially different from what it was before the dividend, except that his proportionate equity is evidenced by a greater number of shares than before

The declaration of a stock dividend may be anticipated by a rise in the price of the old shares of a corporation, but the mere fact that a stock dividend or a split-up takes place does not in itself affect the fundamental values behind the equity represented by the stock of the company Thus, if the market value of the stock of corporation X was $200 a share before the declaration of the previously assumed 50 per cent dividend, it should sell ex-dividend at $133 33 a share, that is, one and a half new shares would equal the value of one old share

Strictly speaking, a stock split-up, as contrasted with a stock dividend, means that the number of shares of stock outstanding is increased, and that either the par value thereof is decreased per share so that the total par amount outstanding remains unchanged or the stock is changed into no par value stock In the present case, for example, the corporation might have changed the stock into 18,000 shares of no par stock and given 4 shares of new stock for each share of old In this case the new stock would have had a market value at the time of split-up of $50 a share If one assumes further that the old dividend rate was $10 a share and that the rate on the new stock is to be $3 a share, the result would be equivalent to an increase of $2 a share on the old stock

The student might well ask at this point "Why is it necessary to go to all the trouble of declaring stock dividends?" To be sure, the same results may be effected by a change in the dividend rate on the old stock The effect of either a stock dividend or a stock split-up is to lower the unit price per share of stock A wider market is created for stock selling at $50 a share than for stock selling at $200 a share. There are more buyers for 4 or 5 shares of stock at $50 than for 1 share of stock at $200 or $250 a share The purpose of this lowering of the unit, or per share, value of the stock is to increase market interest in the shares, widen their distribution, and raise their market value

Dividends may be declared in scrip or even in the bonds of a corporation Where the dividend is in the form of an obligation of the company, the result is essentially that of a declaration of a deferred cash dividend Surplus or earnings must be debited, and the bond account, instead of cash, credited for the amount of the dividend The same results might have been obtained, so far as the corporation is concerned, if it had borrowed the money and paid a cash dividend

# 23
# The Mechanics of Investment

**Purchase and sale of stocks—types of houses** Stocks may be purchased from brokers who are members of some stock exchange, from nonmember brokers, or from investment banking houses Strictly speaking, the broker, whether or not he is a member of a particular exchange, does not maintain a position in securities; that is, he does not own securities himself, but buys and sells on a commission basis The investment house, in contrast, owns certain securities which it offers for sale at stated prices in the same way that a retail or a wholesale merchant offers his wares for sale In practice, the same concern may conduct both a brokerage and an investment banking business Brokers may on occasion, "take a position," that is, deal in securities for their own account

**Commissions** From the investor's standpoint, the difference between purchasing securities on a brokerage basis and purchasing from a house that owns them outright is largely a question of commissions If an order is placed with a broker to purchase stocks or bonds in the open market, the total charge will include not only the price of the securities but a commission as well Brokers operating on exchanges charge standard commissions for buying and selling On the New York Stock Exchange the charges for transactions in most stocks are as shown on page 660,[1] when the stock is traded in regular or "round" lots This unit is ordinarily 100 shares, although it is sometimes 10 shares in the case of some issues, such as some of the less frequently traded high-priced preferred stocks Because a part of the work is done by the odd-lot specialist when less than round lots are purchased, the commission broker's charge is reduced as shown The odd-lot specialist, acting as a dealer, executes orders on the basis of prices established in subsequent round-lots trades on the regular Exchange His charge is ordinarily an additional 1/8 of a point per share, occasionally a 1/4 point

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[1] For further rules of New York Stock Exchange on commissions for ten share unit stocks, for subscription rights, and between members, see Shultz, Birl E , *The Securities Market*, (New York Harper and Bros , 4th ed , 1946)

ROUND LOTS

| *Money Value* | *Commission* |
|---|---|
| If less than $ 100 00 | 6% |
| $ 100 00 to 999 99 | 1% plus $ 5 00 |
| $1,000 00 to 3,999 99 | ½% plus 10 00 |
| $4,000 00 and above | 1/10% plus 26 00 |

ODD LOTS

(Less than a unit of trading)
Same rates as above, less 10%

MINIMUM COMMISSIONS

(Notwithstanding above, each transaction is subject to following minimum charges)

| | |
|---|---|
| Under $15 | As mutually agreed |
| $15 or more but less than $100 | 6% of money value |
| $100 or more | Minimum not to exceed 50c per share, but not less than $6 per transaction |

These minimum charges are not subject to the 10% deduction

To determine the commission charge to be made on a transaction involving multiples of 100 shares, for example, 200, 300, 400, etc, shares, multiply the applicable 100 share commission by 2, 3, 4, etc, respectively, as the case may be

Source Association of Stock Exchange Firms

**Stocks sold on a net basis** In the case of stocks or bonds that are purchased or sold by a house for its own account as a principal or dealer, the price quoted is net to the customer, and no commissions are charged Thus, for unlisted stocks, which are traded in by houses that specialize in their purchase and sale, the market is established by bid and offer prices Such houses offer to sell stock at one price and offer to purchase it at another This spread may be as high as 5 per cent for inactive stocks, whereas, for securities actively traded in, the market is much closer

**Transfer taxes.** A Federal tax is levied on transfers of stock, amounting to five cents for each $100 of par value, or fraction thereof if the stock sells for less than $20 per share However, if the stock is sold at $20 or more per share, the five cent rate changes to six cents No par stock is taxed as though of $100 par value

This transfer tax must be paid by the seller Accordingly, in the case of brokerage transactions, the seller has deducted from the proceeds of the sale not only the broker's commission, but the tax as well

In addition to the Federal transfer tax, a state tax is imposed on the sale of securities in Florida, Massachusetts, New York, Pennsylvania, Texas and South Carolina This tax is imposed on the sale, agreements to sell, memoranda of sale, or transfer of stock, and, is nominal in amount, varying from one to ten cents per share It is likewise payable by the seller and must be paid whether the transfer of stock is made on the books of the company, by assignment in blank, by delivery, or by any paper transferring the beneficial or legal title, or merely the possession of the stock or certificate, although agreements evidencing the deposit of securities as collateral for loans are exempt

**Transfer of stock** Each stock certificate is made out in the name of the owner, who subsequently can transfer title either by indorsing the certificate to a specific party, by blank indorsement, or by executing a separate power of attorney that authorizes someone else, usually a bank or a broker, to transfer the stock

On the face of each certificate of stock will appear the serial number, the total amount of the issue, the number of shares represented by the certificate, proper signatures by the officers of the company, and the necessary authentication by the registrar and transfer agent On the back of the certificate is a blank form of power of attorney, with bill of sale and power of substitution This form usually appears as follows

For value received, hereby sell, assign, and transfer unto , shares of the capital stock represented by the within certificate and do hereby irrevocably constitute and appoint attorney to transfer the said stock on the books of the within-named company with full power of substitution in the premises

Dated , 19 ..
In the presence of
. ..

*Notice* The signature to this assignment must correspond with the name as written on the face of this certificate in every particular without alteration or enlargement, or any change whatever

Corporations customarily maintain three books in connection with stock transfers A certificate book is kept, similar in some ways to an ordinary check book, which contains a series of certificates and stubs When a new certificate is issued, the name of the owner, and, in the event of transfer, the name of the former owner, the date of issue, and the number of shares are all entered on the stub When the certificate is returned to the company for transfer, it is marked "Canceled" and reattached to the original stub A stock record book is kept for the purpose of recording all transfers and issues A third book contains a list of all the stockholders of the corporation and their individual holdings

When a stockholder wishes to transfer his stock, he may either indorse it in blank or indicate the name of the transferee on the certificate Or, he may limit transferability by writing in the name of his broker as attorney (fourth line) with power to transfer the certificate Limitation of transferability is desirable since otherwise the certificate may be lost or stolen, and if it should then pass into the hands of an innocent purchaser for value, such person would have a valid title as against the unfortunate loser The company, upon receiving the old certificate with instructions to issue a new certificate in the name of another holder, cancels the old certificate and makes the necessary changes in its records The new certificate must be authenticated by the transfer agent and the registrar, both of whom are ordinarily independent of the corporation, although in a few cases a major corporation, like the American Telephone and Telegraph Company, acts as its own transfer agent.

**Uniform stock transfer law.** A uniform stock transfer law was approved in 1909 by the Commissioners on Uniform State Laws This law has been adopted, with slight variations, by many, especially the larger, states The essential provisions may be briefly outlined Title to securities may be transferred by the delivery of certificates when indorsed in blank or attached to a written assignment When instructions are given as to the new holder, a new certificate in his or her name is required If the indorsement was secured by fraud or duress, or if delivery was made without authority of the owner, the transfer may be declared void in case the certificate does not come for consideration into the possession of a third party who is ignorant of any illegality Lack of consideration does not invalidate an indorsement Every person who transfers a certificate for value warrants (1) the genuineness of the certificate, (2) his legal right to transfer it, and (3) the absence of any defect in the validity of the certificate so far as he has knowledge

**Orders to buy and to sell** Orders to buy and to sell stocks may be given in a number of different ways We shall describe briefly some of the more important ones

The simplest type of order is known as a market order Here the buyer or the seller gives his broker an order to buy or to sell a definite number of shares of stock "at the market" On such an order, the broker buys or sells the stock immediately In the interests of his customer, however, the broker must carry out the order at the best possible bid or offer on the market With actively quoted stocks, a market order is generally, although not necessarily, executed close to the last sale previous to the entering of the order

A limited order carries with it a stated price Thus an order may be given to a broker to purchase or to sell a certain number of shares of stock at a specified price Such an order may be for a stated time or may be good until canceled Where the price is specified, the broker works on the order as long as it is in force and attempts to get the specified price He may buy the stock at a lower price, or he may sell it at a higher price, for such performance is in the interest of his client, but he may not execute it on terms less favorable than those specified

Stop-loss orders are often given to protect a speculative position in stocks Let us assume that a speculator has purchased 100 shares of Steel Common at 58 and wishes to limit his loss to 5 points He may enter an order to "sell stop" at 53 The broker then acts only if and when the stock declines to 53, at which time he proceeds to execute the order at a price as near to 53 as possible Similarly, when a speculator is operating on the short side of the market, he may enter an order to "buy stop" at a price somewhat above the current market price Thus, assume that the individual in our example had sold 100 shares of Steel Common at 58 and desired to limit his loss to 5 points He would then enter an order to buy stop at 63, and the broker would execute this order at the most favorable price possible after the stock reached 63

The period during which an order remains in force is specified when the order is given An order may be "good for the day," "good for the week," or for any other specified time, or it may be good until canceled It is customary for the market price to adjust automatically in order to allow for dividends If the quarterly dividend on a given stock is $1 a share, the stock will usually sell ex-dividend on the following day $1 lower than it did at the previous close Thus, if a broker has an order to buy 100 shares of such a stock at $50, he will lower this price to $49 the day it sells ex-dividend and so notify his customer

**Selling short.** When an individual sells stock that he does not own, he is said to "sell short" It may seem odd to sell something not owned, but it must be remembered that any speculative transaction—that is, a transaction in which the main consideration is enhancement of principal and not income—consists of two parts a purchase and a sale In a short sale, the time order is reversed as to the sale and the purchase Thus *A* may go into a broker's office and enter an order to sell short 100 shares of Steel Common at the market The broker proceeds to do this and, we shall assume, sells the stock at 50 It is necessary, however, for the broker to make an actual delivery of this stock to the purchaser before the close of business on the third full business day after the date of the trade[2] Thus, for a trade on Tuesday, delivery must be made on Friday *A's* broker, therefore, must borrow the stock from someone who has the stock to lend There is a group of brokers on the exchange who specialize in lending stocks, for the consummation of short sales

**Loans of stock.** When stock is lent in this way, the lender insists that the borrowing broker lend him an amount of money equal to the market value of the stock If the stock is plentiful for lending purposes, the broker who lends the stock but borrows the money will be required to pay the current rate of interest on this loan If, however, stock is scarce, then the rate of interest declines For example, if the rate goes to zero, the lending rate is said to be "flat" In times of extreme scarcity, the broker who lends the stock may get the loan of money and a cash premium That is, in addition to being favored with the loan at no interest, he may receive a cash premium from the borrower of the stock The client who originally went short, however, has to pay this premium, furthermore, he is required to pay the amount of any dividends declared during the time he is short of the stock

**Margin transactions** In cases where stock is sold short, as just described, the broker, of course, will require some protection against the possible inability of *A* to consummate the transaction For example, let us assume that the price of U S Steel advances to $60 a share before *A* "covers" (that is, buys in) If the broker had nothing in the way of security, he would stand to lose the difference between 50 and 60, plus any additional charges, such as dividends and commissions, if *A* went bankrupt during the interim For this reason, the broker will require *A* to put up, not necessarily the entire value of the stock, but a margin equal, we shall say, to 50 per cent of its value If *A* then goes bankrupt, the broker can use this margin deposit, plus the amount he originally received when he sold the stock, to purchase stock with which to pay back the 100 shares borrowed at the time of the sale If *A* were required to put up a 50 per cent margin at the time of the sale, his requirements would have been $25 a share, or $2,500 in all If the stock later advanced to a price of $80 a share, the original margin requirement would be insufficient The broker, therefore, would have required additional margin long before the stock had reached 80 If *A* had failed to meet this call, he would have been closed out That is, when the stock had advanced, say, to 65, the broker would probably have called for more margin Had this not been forthcoming, he would have purchased the stock and returned to the customer the amount due Exclusive of commissions, interest, dividends, and transfer taxes, this amount would have equaled $10 a share On the other hand, if the stock had declined in price, the short seller could have completed his transaction by purchasing and could have made a profit thereby

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[2] There are several different types of delivery The rule stated in the text above is for a trade made the "regular way" Where a cash sale is made, the stock must be delivered by the seller to the buyer on the day of the sale Stock may also be sold for 3-day delivery, or at the buyer's or the seller's option

Stock may also be purchased on a margin Let us assume that *A* wishes to purchase 100 shares of a stock selling at $100 a share on a margin, instead of selling short as in the previous case We shall also assume that the broker insists on at least a 50 per cent margin This requirement would amount to $5,000 The broker purchases the stock and lends *A* $5,000 with which to carry the entire 100 shares The broker, of course, holds *A's* certificate and also charges him interest on the loan *A*, however, is entitled to all dividends on the stock Furthermore, if the price should rise to $120 a share, *A* may sell and retain all of the $20 a share profit; or, if the stock declines to 90, *A* likewise suffers the entire loss The broker obtains the money that he lends to *A* by borrowing at his bank on a time note or by borrowing in the call-loan market "on call "[8] The rate of interest charged by the broker to his customer will be higher than that which he is required to pay

Although the margin requirements of brokers have varied in the past, under the Securities Exchange Act of 1934 minimum margin requirements are placed under the authority of the Federal Reserve Board They have been changed by the board from time to time in the light of market conditions An increase in margin requirements restrains speculation in stocks and credit expansion When stock prices are low and credit is easy, required margins are reduced The margin requirement is the per cent which the buyer must pay down when purchasing a stock In general, it has been set much higher than before the act, running in the neighborhood of 50 per cent or more

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[8] Money borrowed on call must be paid back when demanded by the lender Call loans are always secured, usually by the deposit of stocks and bonds It is customary in the New York call loan-market to renew call loans from day to day at the call-loan rate for the day Call money fluctuates from day to day in sympathy with the demand and supply

**Use of securities as collateral for bank loans** In other cases, investors prefer to have the stock transferred to their name and to use it as collateral for a bank loan, rather than to operate on a margin basis Banks will lend on the more active stocks but are bound by the margin requirements mentioned above It is often possible for the investor to obtain in this way a rate of interest that is lower than that charged by a broker Where the bank receives stock indorsed in blank, as collateral, no additional papers are necessary Where the stock is in the name of the borrower, a power of attorney, properly made out, is given to the bank

**Purchase and sale of bonds, registered and coupon bonds** Bonds have the same negotiable character as stocks Coupon bonds, however, differ from stocks in that they are payable to bearer, that is, title passes by delivery Delivery of the bond thus constitutes full transfer With registered bonds, however, the question of transfer is similar to that of stock Registered bonds are payable only to the party whose name appears on the bond, and to effect the transfer of title, the bond must be properly indorsed and returned to the company or its transfer agent, which then registers the bond in the name of the new owner The inconvenience attached to registered bonds may cause them to sell at a price slightly lower than that at which coupon bonds sell, although this differential rarely exceeds one fourth of a point

Payment of interest on coupon bonds is made upon presentation of the proper coupon Similarly, the principal is paid upon presentation of the bond itself The holder of a fully registered bond receives both interest and principal in the form of a check If the bond is registered as to principal only, then interest is paid upon presentation of coupons, while principal is paid to the registered holder by means of a check

**Accrued interest** Practically all bonds are quoted and sold "and interest"[4] This expression means that, in order to arrive at the total cost of the bond, the accumulated interest must be added to the quoted price of the bond This treatment is proper, since the owner of the bond is entitled to interest on his security so long as he holds it, whereas the new owner's interest should begin on the day of purchase. Regardless of the current rate of interest, or of the yield basis on which the bond is sold, it is customary to compute accrued interest on the basis of the coupon rate of interest that the bond bears.[5]

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[4] Bonds in default and income bonds are generally sold flat—that is, the quotation includes any accumulated interest

**Commission on bond sales.** Transactions in unlisted bonds are usually "net", that is, the price includes all commissions. The reason for this practice is that unlisted bonds are usually bought and sold by houses that act as dealers rather than as agents or brokers. For bonds listed on the New York Stock Exchange, the following commission rates are charged.

| *Price Per $1,000 of Par Value* | *Rate per Bond Number of Bonds* *1 or 2* | *3* | *4* | *5* |
|---|---|---|---|---|
| Selling at less than $10 | $1.50 | $1.20 | $ .90 | $ .75 |
| Selling at $10 and above but under $100 | 2.50 | 2.00 | 1.50 | 1.25 |
| Selling at $100 and above | 5.00 | 4.00 | 3.00 | 2.50 |

Lower rates as may be agreed upon may be charged for executing trades in bonds or notes that are short term, called, or Governments.

**The New York Stock Exchange.** No discussion of the subject of investment would be complete without some reference to the New York Stock Exchange. This organization occupies a position of unique importance in the field of finance, although nominally it is only an unincorporated association of brokers, limited to 1,375 members, formed to provide a place for trading in such securities as are accepted for listing.

Membership is termed a "seat," and gives the owner the privilege of transacting business on the floor of the exchange. The objects of the exchange are "to furnish exchange rooms and other facilities for the convenient transaction of their business by members, as brokers, to maintain high standards of commercial honor and integrity among its members, and to promote and inculcate just and equitable principles of trade and business."

Members may act as either brokers or traders, or both. In the capacity of brokers, they execute, for their clients, orders to buy or to sell securities on the floor of the exchange. As traders, they buy and sell securities on the floor of the exchange for their own account. The Securities and Exchange Commission is permitted to segregate and limit the functions of members, and has made a study and report on the question of the advisability of completely segregating the functions of dealer and broker Strict rules require that brokers when dealing for their own account shall give precedence to the orders of the outside public Activities are regulated to insure a high standard of public responsibility

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[5] The computations involved in determining accrued interest are discussed on p. 650.

We need not go into detail regarding the organization of the exchange As a matter of practice, the Governing Committee is vested with absolute power over its members This committee has power to suspend or to expel any member for violations of the constitution, or for unjust or inequitable conduct in connection with trading, or for any acts that may be detrimental to the exchange The Governing Committee has always insisted on a high standard of business conduct, and members may be disciplined for offenses against the rules of the exchange, even if no civil statutes are violated

The practices upon the exchanges are also subject to the regulation of the Securities and Exchange Commission created by the act of 1934 The commission has the power to penalize any unfair practices and manipulation that have been forbidden and in some cases punished by the exchange in the past Because of its position as a governmental agency it has greater power to initiate reforms in practice and may control the actions of those who are not members of the exchange

**Requirements for listing securities.** Only stocks that are listed may be traded in on the exchange Occasional exceptions are found on the lesser exchanges for what is called the "unlisted" trading privilege The practice is a survival of the early days when, as on the New York Curb, trading took place in the stocks of large corporations which were unwilling to take the steps required for listing When a corporation wishes to have its securities listed, it must make formal application, which is passed upon by the Committee on Stock List Upon the occasion of an original listing, the applicant corporation must submit data upon (1) the nature of the company's business, its history and similar information, (2) financial statements, and (3) the details of how widely the security is distributed. After the required listing fees have been paid and the Committee has investigated and approved the application, it certifies the security to the Securities and Exchange Commission for registration

We shall not consider the rather technical details that are involved in these documents, nor shall we undertake an examination of all the requirements that must be met[6] In a general way, it may be said that complete information is required concerning the nature of the corporation, its product, its history, its management, its places of doing business, its capitalization, and so forth The latest available balance sheet and income account of the corporation, together with a complete financial history, are likewise required A statement of the purpose of the issue to be listed must be furnished, as well as copies of the corporation charter and by-laws, and certain legal papers certifying the legality of the issue about to be listed The exchange likewise exercises strict supervision over the form and the manner in which all securities shall be engraved, and requires that all corporations making application for listing their securities agree to maintain a transfer office or agency in the Borough of Manhattan, City of New York, where all listed securities shall be directly transferable, and principal, interest, and dividends thereon payable A register other than the transfer office or agency must likewise be maintained, where all listed securities shall be registered

Once a portion of or all a corporation's securities are listed the company submits itself to the requirements of the Exchange and the regulation of the Securities and Exchange Commission One of the most important requirements is full disclosure of financial information at regular intervals The exchange further requires that adequate notice be given of rights or subscription privileges, of actions regarding dividends, and of interest In fact, adequate notice is required of all acts that affect the interests of the holders of the listed securities

One of the essential functions of the exchange is to facilitate trading in securities To this end, securities with a narrow or restricted market are not acceptable And, similarly, "corners" are regarded as highly detrimental to free trading Accordingly, when it appears that the distribution of a stock is such that it restricts trading unduly, it may be stricken from the list, or trading therein may be suspended[7]

Generally speaking, the listing of a security gives it a wider market than it would otherwise enjoy The fact that active trading takes place in most listed securities also makes it possible for the holder of such securities to obtain accurate information regarding the market value of his holdings from day to day This information is made available through current quotations on actual sales Listing is also a guaranty that the issue is bona fide, and has behind it a going concern Likewise, the publicity that is assured the owners of listed securities is helpful The fact that a wider market is usually available on listed securities, as well as complete data relative to their market price, adds to their collateral value Banks accept pledged securities not as investments, but rather as assets to be disposed of if the loan is not repaid The ease with which the collateral may be converted into cash, therefore, rather than its inherent investment value, is the governing consideration in determining how much will be lent on a given stock or bond Besides these advantages, there is little difference between listed and unlisted securities Mere listing of a security is no guaranty of value

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[6] A detailed discussion of listing requirements may be found in Shultz, Birl E, *The Securities Market* (New York Harper & Bros, 4th edit, 1946), Chapter III

[7] Stock is said to be "cornered" when a large part of the floating supply is acquired by an individual or group who may thus control its price Those who are short of a stock that is in this position are at the mercy of those who have cornered the stock, and must cover their sales at whatever price is asked In the case of cornered stock the regular rules of delivery may be suspended

**Ticker service recording sales of stocks and bonds** All transactions in stocks and bonds on the New York Stock Exchange are given immediate publicity by means of the ticker Prices are immediately recorded on ticker machines and duplicated in brokerage offices throughout the United States Prices recorded on the tape, as it is called, are records of actual transactions that occur on the exchange

**Other exchanges** The New York Curb Exchange is an organization of lesser importance than the stock exchange, although it is similarly organized and now functions in much the same way Membership is limited, dues are payable, stocks and bonds are listed, and buying and selling orders are executed, although the stocks there listed are often new issues, or issues that do not meet the New York Stock Exchange listing requirements Organized stock exchanges are also found in other cities, among the more important of which are the Midwest Stock Exchange, located in Chicago, the Boston Stock Exchange, and the Philadelphia Stock Exchange Trading on these exchanges, however, is dominated by the state of trading on the New York Exchange

**Functions of investment bankers.** A wide distinction exists between the work of a stock exchange house, which does a strict brokerage or commission business, and that of the investment banker The former operates strictly on a commission basis and will execute any order that is accompanied by proper assurances that the client can meet his obligations A broker assumes no responsibility as to the outcome of his client's operations, he simply stands ready to execute orders

The investment banker, on the other hand, is a merchandiser in securities Although investment bankers may be classified as either wholesale or retail, depending upon whether they sell to dealers or directly to investors, their essential functions are generally similar and may be discussed under four headings purchasing, selling, protective, and advisory

**Purchasing function.** When a corporation desires funds for long term financing, it approaches an investment banking house and states its requirements Negotiations are then entered into that determine whether the banking house will purchase or reject the issue In recent years, the practice has grown of selling an issue of bonds for a utility or a railroad by competitive bidding much as in the field of municipal bonds When the job is particularly difficult or the situation requires an intimate familiarity with the issuing corporation, as is more likely for common stocks than for bonds and for industrial corporations than for public utilities, the corporation management may negotiate the sale with the investment bankers Once a suitable connection is established between banker and corporation, it is usually maintained While this practice has been criticized as reducing competition, the arrangement has advantages Experience with successive issues familiarizes the banker with the affairs of the concern As a result, he can more intelligently advise the corporation on financial policy Likewise, in times of emergency, the banker feels a certain responsibility for those houses with which he has had continued relations

Prior to the purchase of an issue, the banking house customarily makes an exhaustive investigation The first step in this process is the preliminary investigation that covers only the financial statements and general history of the company If this survey shows that the proposition is of real merit, then a more exhaustive examination is made of the plant and internal affairs of the corporation At this stage, appraisers are engaged to determine the value of buildings, equipment, and inventories Auditors are employed to check up on financial records and accounting practices Engineers study production, other specialists study the marketing policies, and attorneys investigate franchises, leases, and contracts Each specialist reports back the results of his investigation The next step is a conference, at which the nature of the security, the interest rate, the maturity dates, and the purchase price are settled Throughout the investigation, the banker considers the possibility of a resale to the investing public In view of the narrow margin that generally exists between the purchase and the sale price of the better-grade issues, it is important for the banker to determine in advance the reaction of the public to the issue

**Selling function.** Once an issue has been purchased and properly registered with the Securities and Exchange Commission, the next function is to distribute it to the investing public With large issues, the originating firm will invite other houses to join in underwriting part of the entire amount With smaller issues, the purchasing house may undertake the entire distribution, although it offers certain concessions to other dealers, who, in turn, retail to their clients the securities so purchased After the issue has been purchased, the selling function is pursued vigorously by the investment banker Descriptive circulars are prepared and mailed to a wide list of prospects, advertisements are inserted in financial publications, and customers are approached by the salesmen of the house

To this end investment banking houses require salesmen of a high order Many houses develop and train their own salesmen Recruits are carefully selected, often from the graduating classes of universities During the early stages of training, these recruits are given various minor positions in the firm, and are assigned such duties as running errands, assisting in statistical and accounting work, and attending classes and lectures Later, they will be assigned a list of prospects on which to call, possibly in the company of an older man Finally, the initiates are put on their own feet

**Protective functions.** The inability of the ordinary investor to discriminate between good and poor investments has placed a real responsibility on the investment banker His most important function is to keep his clients out of poor securities However, since no one in infallible, mistakes are bound to be made even by the best investment bankers Some issues, regardless of how carefully they were originally investigated, turn out poorly When an issue proves to be unsatisfactory, the originating house has a responsibility, even though it is not a legal one, and is expected to play a part in the organization of protective committees and in the work of reorganization The originating house is likewise expected to maintain the offering price of an issue until it is fully distributed, and thereafter to create a market[8] This latter function is fulfilled by establishing a "bid and asked" price The house agrees to buy at one price and to sell at another There is a normal spread in active unlisted securities of from one half to one point In inactive issues the spread will vary more widely It is this spread that furnishes the banker with a profit on trading activities

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[8] It may be noted that pegging prices "in contravention of such rules and regulations as the Commission may prescribe as necessary or appropriate in the public interest or for the protection of investors" is forbidden by the Securities Exchange Act of 1934 Supporting purchases are permitted, however, during the period of underwriting, but the activity must be disclosed

**Advisory functions** The investment banker also undertakes to perform advisory services for his clients Many houses offer the use of their statistical departments for the purpose of answering inquiries of clients An attempt is often made to advise clients of the proper distribution of their holdings or on matters of taxation, to notify customers when bonds are called, and to advise when shifts should be made from one commitment to another Some houses go so far as to maintain lists of customers' securities and to render periodic reports thereon

**Investment counsel.** Increased recognition of the difficulty entailed in obtaining expert and disinterested advice from those who are in the business of selling securities has led to a marked increase in the number of independent investment counsellors in recent years Such individuals or concerns have but one thing to sell—namely, investment advice They have the advantage of being specialized experts who can make detailed studies both of specific securities and of the various external conditions that influence investment return They can also give advice based upon the individual's peculiar personal situation Such work is made possible by the fact that its cost and its benefits are spread over a large number of investment accounts

The charges for investment counsel will usually consist of an initial fee and an annual commission during the life of the arrangement The initial fee might be based upon the labor entailed in making the initial study of the portfolio held and the size of the account It might range up to one per cent of the principal taken at market value The annual charge would usually amount to from one quarter to one half of one per cent of the market value of the portfolio The possible worth of such a service is evident, but its exact value is sometimes diffcult to gauge As in the case of the services of the doctor and the lawyer, the results may be achieved under either very adverse or very favorable circumstances, and in judging performance such circumstances should always be considered

Under investment counsel, the investor generally retains custody of his securities and is the ultimate judge of whether recommendations shall be put into effect Some banks and trust companies now offer a custodian service for small charge, which permits the speedier execution of any changes desired

Most investment counsellors do not care to accept small accounts, because even a minimum of work and attention is likely to involve more expense for a service of high quality than can reasonably be collected in charges The small investor is directed to such indirect forms of investment guidance as he can obtain by using the savings bank, the savings and loan association, the various savings contracts of the life insurance company, and United States Savings bonds, or, if he should choose equities rather than credit obligations, the investment company of the mutual-fund or closed-end type may be suggested Home ownership offers a commitment similar to common stock with respect to the influence of price level movements

The Investment Companies Act brings investment advisers under the supervision of the Securities and Exchange Commission They are obliged to register and furnish information at least annually Compensation based upon a share of capital gains or appreciation is forbidden Fraud or deceit is outlawed and the counsellor may not act as a principal or broker in dealings with his client Control by the commission does not apply where (a) the clients are all within the state, and advice is not given about securities listed on national security exchanges, (b) where the only clients are investment companies and insurance companies, or (c) when the adviser has fewer than 15 clients and does not hold himself out to the public as an investment adviser The growing tendency is to develop professional standards of responsibility and ethics in the relation of the investment adviser and the individual investor

**Securities and Exchange Commission** Prior to 1933, protection of the investor by governmental devices, except the regulated public service industries, was largely confined to. (1) certain state blue-sky commissions, designed to force the publication of adequate information relative to new security issues and to prevent the unwary from buying "blue sky" as an investment, (2) prosecution for the fraudulent use of the mails to sell securities, and (3) such redress as might be obtained under the general laws against fraud Recognition of the abuses in this field led to the Securities Act of 1933 and the Securities Exchange Act of 1934 Under the latter the Securities and Exchange Commission was created with five members appointed by the President of the United States to regulate (1) new security issues of private corporations and foreign governments, and (2) the activities of the security exchanges in a manner that would protect the public interest Under these acts all new securities, with minor exceptions, must be registered with the commission before they may be offered to investors Fraudulent and misleading information is checked, securities of clearly bad character are barred, and severe penalties are provided for those who break the law As a result of such registration, a huge amount of valuable information is available to statistical services and investment counsel, who would in any case be the most likely to use such material

The following are the commission's powers with respect to the security exchanges:

1 Exchanges are required to register and to agree to certain standards of practice

2 Corporations listing their securities on these exchanges are required to make financial and other reports of an adequate sort as prescribed In addition to a suitable balance sheet and income account, supporting schedules are called for to clarify important items, such as investment holdings, salaries and other compensation of officers and directors, and amount of and changes in holdings of chief stockholders

3 Manipulation of security prices is prohibited While the new act gives the commission power to take vigorous measures against such manipulative practices, rules of the New York Stock Exchange and other stock exchanges had previously forbade wash sales, transactions made to influence price, circulation of rumors, and the pegging or fixing of prices

Other important steps are being taken by the commission One of the most difficult steps is to undertake the regulation of activities of dealers and brokers in the over-the-counter market Many substantial and reputable houses participate in this unorganized market where most of the bond trading, including that in United States Government obligations, takes place However, here also are to be found small dealers and brokers of doubtful ethical standards, engaged in trading in securities that are little known and that are sometimes of uncertain reputation

To meet the problem of the unregulated over-the-counter markets, the National Association of Securities Dealers, Inc, was incorporated in September, 1939 to carry out the provisions of the Securities Exchange Act of 1934 This organization constitutes a self-regulatory body with the cooperation of the S E C and the support of its disciplinary powers The objective is to prevent unfair charges to customers, require disclosure of whether the customer is dealing with a broker or principal, see that quotation information published is satisfactory, and, in general, do away with the abuses that have existed in the over-the-counter markets of the past[9]

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[9] See Cherrington, Homer V, "National Association of Securities Dealers," *Harvard Business Review*, XXVII 741–759 (November, 1949)

**Sources of investment information.** The most important daily publication dealing strictly with investment news is the *Wall Street Journal* In addition to complete market reports covering daily prices and sales of listed and unlisted securities, it also contains a very wide range of financial news Current banking statistics, information regarding new issues, money rates, and similar data are included, together with frequent editorial comment Political activities, in so far as they are related to finance, are reported The Dow-Jones averages, which have reflected the movement of leading securities for a number of years, originate in this publication Of distinct value to the investor are the quarterly, semiannual, and annual reports of earnings of the more important corporations Such reports are published immediately upon becoming available Reports of the larger corporations are accompanied by excellent editorial analyses The *Journal of Commerce* (New York) covers business rather than financial news but provides a wealth of trade information useful in understanding security price movements

Of the more general newspapers, *The New York Times* undoubtedly has the most comprehensive financial section and is read nationally Its reporting service is excellent, and its editorial analyses are conservative and accurate The *New York Herald Tribune,* among other metropolitan dailies, also offers excellent and detailed financial news

**Other publications** The *Commercial and Financial Chronicle,* commonly referred to as the *Chronicle,* is the most comprehensive exclusively financial organ Formerly a weekly, it now appears two times each week It would indeed be difficult to describe in detail the amazing scope of this publication Practically all important business news and current financial statistics, including a very wide range of corporate reports, are given The publishers of the *Chronicle* also publish the monthly *Bank and Quotation Record,* which offers quotations on a very extensive range of listed and unlisted securities The *Bond Buyer* appears both as a daily and a weekly paper, and it is invaluable for those interested in municipal issues *Barron's,* a financial weekly, has articles on topics of general investment interest, and also material bearing upon the record and prospects of securities of all types The *Financial World* (weekly), *Dun's Review,* and the *Magazine of Wall Street* (biweekly), all contain interesting information concerning investments

**Investment information services.** Some of the commonly used investment information services are published by Standard & Poor's Corporation, Moody's Investors Service, Fitch Investors Service, Wiesenberger, Dun & Bradstreet, Inc., White & Kemble, and H. H. Copeland and Company. Each company, and the various services that it publishes, will be considered separately in the following paragraphs.

For the investor wanting a comprehensive service providing factual financial information, Standard & Poor's publishes its *Corporation Records,* which is in six loose-leaf volumes that permit complete revision for each company when its annual report is released. Significant current releases are also published to supplement this basic data.

The *Trade and Securities Service* includes (1) *Industry Surveys* (twice a week), which covers basic facts about the operations, profits and long-term outlook for the industry and gives financial information on the companies in that industry. (2) *The Outlook* (weekly) forecasts security market trends and recommends specific investment policies. (3) *Statistics* (monthly) is a loose-leaf volume periodically revised that contains stock and bond price indexes as well as series for many other significant business factors, such as commodity prices, employment, foreign trade, production, and inventories. (4) *Earnings & Ratings Stock Guide* (monthly) indicates what the organization thinks about the current attractiveness of a wide list of preferreds and commons. Recently this service has been modified to indicate the investment objective, as "for income" or "for long-term growth," for which the given security is regarded as a desirable purchase when recommended. (5) *Special Surveys* (periodically) are also included from time to time.

Other publications are its *Dividend Record,* containing daily information on both dividends and "rights," a *Called Bond Record,* a *New Issues Service* reporting data from official registration statements, *Bond Reports,* a *Bond Guide,* a *Stock Guide,* and some other special materials. *Poor's Register of Directors and Executives* (annual) is also well known.

In addition to its regular published services available on a subscription basis, Standard & Poor's offers an individualized investment advisory service to both institutions and individuals.

*Moody's Investors Service.* One of the older investment services, widely used by investors, is published by this company. The best-known part of the service consists of *Moody's Manual of Investments,* published annually in five volumes: "Governments and Municipals," "Industrials," "Public Utilities," "Railroads," and "Banks, Finance, and Insurance Companies." These volumes contain not only analyses of the financial statements of an extensive list of corporations and full information regarding the terms of their various securities, but also definite ratings on most bonds The ratings extend from Aaa, which is the highest, to C, which is the lowest[10] The system of ratings is explained in the first part of each volume The various volumes are supplemented by a semiweekly service, which gives current financial news and reports appearing between annual publication dates

In addition to the service just referred to, there is *Moody's Stock Survey* and *Bond Survey* (both weekly), which give opinions on security market trends, review individual issues, and make recommendations for purchases, sales, and exchanges Other services include *Moody's Daily Call Service,* a complete record of called securities, and *Moody's Dividend Record,* a weekly cumulative feature *Moody's Bond Record* is a semi-monthly feature, covering a very substantial list of bonds, with ratings, essential statistical data, price quotations, and the location of their market Moody's also offers investment counsel service to individuals, institutions, and estates

*The Fitch Publishing Company, Inc* The services published by this company include

(1) *The Fitch Bond Book,* in which are contained statistical descriptions of railroad, public utility, industrial, real estate, Federal, and foreign government external bonds Each bond is rated according to the Fitch system, which comprises four principal groups A, B, C, D Each group has three subdivisions, such as AAA, AA, A, indicating the position of the bond within the group

(2) The *Fitch Statistical Service* consists of (a) *Corporation Manuals,* covering stocks and bonds and continuously revised, (b) *Daily News, Earnings and Descriptions,* (c) *Daily Dividend Section, Daily Redemption Section,* and (d) the *Trade Industry and Security Service* Portions of the *Service* may be purchased separately

(3) *The Fitch Individual Bulletin Services* covers individual companies and contains both factual material and an opinion of company outlook and of the investment merit of the securities. Both listed and unlisted securities are included

(4) *The Fitch Weekly Bond Record* is a bond quotation feature, which presents not only recent price records but also brief statistical data A review is also included giving recommendations, groupings of bonds by industries, defaulted bonds, interest prospects of weak issues, quotations for inactive issues, and special items

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[10] For a discussion of the merits of ratings, see Harold, Gilbert, *Bond Ratings as an Investment Guide* (New York Ronald Press Co 1938)

of interest Special reports are available on important individual bonds

(5) Other services are the *Fitch Daily Market Reports* and the *Fitch Stock Record* The *Fitch Supervisory Service* is a personalized counsel service to meet the individual requirements of private and institutional investors

Arthur Wiesenberger's *Investment Companies* is a manual devoted solely to that field and published annually Introductory material constitutes a virtual textbook on the subject and tabulations of comparative statistical material are most helpful

*Dun & Bradstreet, Inc* This company is generally known for its commercial credit information service, but it also offers information on municipalities, either as individual reports or, more usually, as a service on one of the following bases

1 Reports on any cities, counties, or states that bring into the market new offerings of $500,000 or more with a maturity of more than one year

2 A continuous watching service for those managing a municipal portfolio It includes cities with a population of 50,000 and over, counties with a population of 150,000 and over, the borrowing states, and 13 of the larger borrowing districts whose bonds are widely held, a total of 300 governmental units The reports on this list are covered twice a year

3 A selective service consisting of a limited number of reports varied to meet the needs of the customer

4 A special service devoted to the cities, counties, townships and districts of New Jersey with a population in excess of 10,000

*White & Kemble* The atlas published by this company, *White & Kemble Atlas and Digest of Railroad Mortgages,* contains a separate map for each of the more important American railroads, on which are shown the route of the railway and the various mortgage liens on the different sections of the road Successive mortgages are indicated by colored symbols Each mortgage is assigned a number on the map, and in the accompanying digest are given the principal features of the mortgage

*H H Copeland and Son* The *Copeland Freight Density Service* shows on a comparable basis the traffic support of the several bond issues of each important railroad Traffic (freight tonnage) is reduced over each section of railroad to a "ton miles per dollar of funded debt" figure Density maps are prepared from such figures for each road, which are supplemented by mortgage tables, statements of traffic interchanged, and other data

*Miscellaneous sources* In special fields of finance there are publications of a more restricted nature Thus the *Mines Register* is a manual of the mining industry of the world, published at irregular intervals, volume (XXIII) appearing in 1949[11] Statistics are given showing the production of principal metals, reports on individual companies, and a list of obsolete mining securities *Best's Insurance Reports* contains excellent financial data on insurance companies It is published annually in three parts (1) "Life", (2) "Casualty, Surety, and Miscellaneous", (3) "Fire and Marine"[12] The *Railway Age*, the *Transit Journal*, the *Iron Age*, the *Public Utilities Fortnightly*, and the *Electrical World* each contains valuable investment information for the industry represented The *Annual Report of the Council of Foreign Bondholders*, issued by the Corporation of Foreign Bondholders, London, England, and the Bulletins of the Institute of International Finance of New York University contain excellent information concerning foreign issues

Other meritorious investments services and periodicals are not mentioned here for reasons of space In general, the services mentioned emphasize information rather than specific advices on investment Many of the leading brokerage and investment banking houses also prepare interpretative and analytical material valuable to the investor

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[11] New York Mines Publications, Inc, New York, N Y

[12] Alfred M Best Co, New York

# 24

# Effects of Taxation on Investment Policies

**Method of approach.** No text on investments would be complete without some reference to taxation as it is related to the investment problem One has the choice here of several methods of approach From a practical standpoint, the investor is interested in the effect of various taxes on the net yield of different types of securities, as well as the amount of trouble involved in paying taxes on the principal or income of the investment The economist is interested essentially in the incidence of taxation and the economic effects thereof on production, consumption, and saving The lawyer, on the other hand, is interested primarily in the legal aspects of taxation

It will be impossible for us in the space that can properly be allotted here to discuss the question of taxation from all these viewpoints Consequently, we shall attempt only a brief outline of the subject of taxation, with reference to the problems that arise in the investor's practical work of making commitments and managing investments

**Classification of taxes.** From the standpoint of the investor, taxes may be classified in one of two ways (1) on the basis of the taxing authority, (2) on the basis of the person who pays the tax The taxing authority may be either a foreign government, the Federal Government, a state, or a local division of a state The tax may be incurred by the investor himself, because of his ownership of a security or of property, or it may be incurred by a corporation or other entity that owns the property, the income from which is the source of the investor's income

**Foreign taxes.** Where income is derived from a foreign business or from foreign property, the country in which the business or property is located may tax the income The subject is too complicated to be treated here at length In the case of securities, the tax position of an investment ordinarily can be learned from the house through which the securities were issued Generally, securities originating in foreign countries are brought out in such a way that foreign taxes will not be incurred by the American holder In view of current disturbed conditions the matter of taxation should be watched closely [1]

**Federal taxes** Investors are interested in four forms of Federal taxes

1 The income tax
2 The estate tax
3 The gift tax
4 The stock transfer tax

These taxes will be discussed briefly in the following pages

**State and local taxes** State taxes in which the investor, as such, is interested, include income taxes, inheritance and estate taxes, gift taxes, stock transfer taxes, and the general property tax

**Federal income tax.** The Federal income tax is a progressive or graduated tax, that is, the tax becomes heavier as the taxpayer's income increases Such graduation is based on the economic theory that one's ability to pay increases at a more rapid rate than one's income The present Federal income tax dates back to the year 1913 and was made possible by the passage of the Sixteenth Amendment to the Federal Constitution, which gives the Federal Government the right to levy and to collect income taxes without reference to its apportionment among the different states on the basis of their population

For the first few years during which the present series of income taxes were in force, the rates of taxation were moderate and the effects on investment holdings—including even those of the receivers of large personal incomes—were not pronounced As far back as 1913, however, we find the distinction made between normal taxes and surtaxes With the entrance of America into the first World War, both normal rates and surtaxes were raised because of the greatly increased needs of the Government for more revenue Although rates were reduced somewhat during the decade following the close of the war, they were never lowered to the level in effect prior to 1917 Furthermore, first as a result of the falling off of revenues during the depressed 1930's, and then as a result of the national defense program inaugurated in 1940, rates were again substantially increased, beginning with the 1932 act, so that they have reached very high levels The large budgetary needs of the Federal Government indicate that a continuance of high rates will be necessary

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[1] Special rules apply to gain or loss in foreign exchange transactions Hoffman, Leo H , "Some Profits on Devaluation Tax-free," *Barron's*, Oct 10, 1949

**Rates under the present act.** The Internal Revenue Code (as amended by various Revenue Acts imposes two taxes on the incomes of individuals

1 The tentative normal tax of 3 per cent on net income in excess of credits

2 A tentative surtax graduated from 17 per cent to 88 per cent, on "surtax net income" over $2,000 Surtax net income consists of net income less surtax credits

The actual tax is the total tentative tax (tentative normal tax plus tentative surtax) reduced by various percentages, which may vary from year to year and are shown in the accompanying table of rates

It is important to distinguish between the tax rates applicable to the individual incomes of persons filing separate returns and the individual incomes of married persons filing joint returns While the tax rates stated above apply to both separate and joint returns, the so-called income-splitting provisions of the 1948 Revenue Act have the effect of permitting the married couple to divide their combined income into two equal parts and computing a separate tax on each half under the above rules As a result their income does not reach up into the high brackets where the surtax rates are largest, as it would if the spouse with the larger income were obliged to report separately as was formerly the case This change in the tax law was made in order to equalize the tax liability of spouses in community property and non-community property states In community property states the income of either spouse is regarded as belonging half and half to each of the spouses

*Credits* The law allows the following credits to be deducted from net income before the tax is computed

1 For purposes of the normal tax

(*a*) A taxpayer has a $600 exemption, or $1,200 if husband and wife file a joint return, plus $600 for each dependent Additional exemptions of $600 each are available if the taxpayer or his spouse are over 65 years old or blind An estate is allowed a $600 credit against net income, a trust is allowed a credit of $100

Because rates and exemptions change frequently the figures given here may be regarded primarily as illustrative of practice (*b*) Interest on certain obligations of the United States, its instrumentalities, and corporations created by act of Congress

2 For purposes of the surtax, only the exemptions for the taxpayer, his spouse, and dependents are deducted from net income before the tax is computed

Credits against net income should be distinguished from deductions The former are allowed primarily in order to impose the burden of the tax on those who have more than a certain minimum amount of income that is exempted, the latter are allowed in order to measure "net income," on which the tax is imposed

The tax for persons with incomes of various amounts filing separate returns and for husbands and wives filing joint returns is indicated in the table on page 685

**What income is taxed** In general, income is the gain derived from capital, from labor, or from both combined, including profits gained through a sale or through a conversion of capital assets

All income of citizens or residents of the United States, irrespective of the source from which it is derived, is subject to tax Income of nonresident aliens (that is, persons who are neither citizens nor residents) derived from sources within the United States is also subject to tax To this general rule, however, there are certain exceptions For example, the Federal Constitution, as interpreted by the courts, forbids the United States to impose any burden on the states or their instrumentalities Under this rule, some have considered that interest on bonds issued by the states and their municipalities is entirely exempt from the Federal income tax However, some of the other limitations, formerly considered to be imposed by the Constitution, are being abandoned Thus, in 1939 Congress imposed the Federal income tax on compensation of officers and employees of the states and their political subdivisions Prior to that time, such a tax was widely considered unconstitutional, but the courts had begun to relax the rule, and Congress took advantage of this to impose the tax A similar change may take place with respect to state and municipal bond interest

Other statutory exclusions from income are· (1) proceeds of life insurance paid because of the death of an insured person (but income from such proceeds is taxable), (2) an amount received as a gift, bequest, or devise, (3) to a limited extent, the proceeds of endowment and annuity contracts, and (4) compensation for injuries or sickness, whether received as damages or as insurance

Other exclusions from gross income arise from various provi-

### COMBINED NORMAL TAX AND SURTAX BEFORE PERCENTAGE REDUCTION

(Revenue Act of 1950)

| *If the amount of net income less exemptions (separate return) or one half of net income less exemptions (joint return) is* | *The tentative normal and surtax is* |
|---|---|
| Not over $2,000 | 20% |
| Over $ 2,000 but not over $ 4,000 | $ 400, plus 22% of excess over $ 2,000 |
| Over 4,000 but not over 6,000 | 840, plus 26% of excess over 4,000 |
| Over 6,000 but not over 8,000 | 1,360, plus 30% of excess over 6,000 |
| Over 8,000 but not over 10,000 | 1,960, plus 34% of excess over 8,000 |
| Over 10,000 but not over 12,000 | 2,640, plus 38% of excess over 10,000 |
| Over 12,000 but not over 14,000 | 3,400, plus 43% of excess over 12,000 |
| Over 14,000 but not over 16,000 | 4,260, plus 47% of excess over 14,000 |
| Over 16,000 but not over 18,000 | 5,200, plus 50% of excess over 16,000 |
| Over 18,000 but not over 20,000 | 6,200, plus 53% of excess over 18,000 |
| Over 20,000 but not over 22,000 | 7,260, plus 56% of excess over 20,000 |
| Over 22,000 but not over 26,000 | 8,380, plus 59% of excess over 22,000 |
| Over 26,000 but not over 32,000 | 10,740, plus 62% of excess over 26,000 |
| Over 32,000 but not over 38,000 | 14,460, plus 65% of excess over 32,000 |
| Over 38,000 but not over 44,000 | 18,360, plus 69% of excess over 38,000 |
| Over 44,000 but not over 50,000 | 22,500, plus 72% of excess over 44,000 |
| Over 50,000 but not over 60,000 | 26,820, plus 75% of excess over 50,000 |
| Over 60,000 but not over 70,000 | 34,320, plus 78% of excess over 60,000 |
| Over 70,000 but not over 80,000 | 42,120, plus 81% of excess over 70,000 |
| Over 80,000 but not over 90,000 | 50,220, plus 84% of excess over 80,000 |
| Over 90,000 but not over 100,000 | 58,620, plus 87% of excess over 90,000 |
| Over 100,000 but not over 150,000 | 67,320, plus 89% of excess over 100,000 |
| Over 150,000 but not over 200,000 | 111,820, plus 90% of excess over 150,000 |
| Over 200,000 | 156,820, plus 91% of excess over 200,000 |

*Percentage reduction of tentative normal tax and surtax*

*1950 calendar year*—The tentative tax is reduced as follows

13 percent of the first $400 of tentative tax,

9 percent of that part of the tentative tax in excess of $400 and not in excess of $100,000,

7 3 percent of that part of the tentative tax in excess of $100,000

Combined tax cannot exceed 80% of net income

*Taxable years beginning before October 1, 1950 (other than calendar year 1950)*—The tentative tax is reduced as follows

17 percent of the first $400 of tentative tax,

12 percent of that part of the tentative tax in excess of $400 and not in excess of $100,000,

9 75 percent of that part of the tentative tax in excess of $100,000

Combined tax cannot exceed 77% of net income

*1951 calendar year and other taxable years beginning after September 30, 1950*—No percentage reduction is allowed

Combined tax cannot exceed 87% of net income

sions of the act For example, distributions made by a trust, where the tax on such income has been paid by the trust, is not again subject to tax in the hands of the beneficiary Likewise, the taxing act specifies that in certain instances income of one person is to be deemed that of another Thus the tax on the income of a trust under which the grantor retains a right of revocation must be paid by the grantor, and not by the recipient of the income Again, where a person assigns his right to remuneration for services to a third party, the assignor is taxed for the income in the same manner as though the assignment had not been executed

In contrast with the exclusions from gross income are the deductions that may be taken in arriving at net income Only the net income of a taxpayer is taxable In general, the deductions consist of all items that may be classified as business, rather than personal, expenses Interest, however, is deductible, with some minor exceptions, regardless of whether the debt upon which it is paid was incurred in a personal or a business capacity Other important deductions include losses to the extent allowed by the statute, and taxes paid or accrued within the taxable year, except Federal income and profit taxes, income and profit taxes imposed by a foreign country, death duties and gift taxes, and such taxes assessed for local benefit as tend to increase the value of the property against which they are assessed

**Bond premium deduction** Since 1941 the law has permitted a deduction for amortization of the premium on bonds purchased at a premium This is a separate deduction only if the taxpayer itemizes all his deductions on his tax return (that is, does not take the optional standard deduction)

This deduction generally has a twofold effect It reduces both the amount of taxable income and the basis of the bonds for determination of gain or loss when they are sold or otherwise disposed of

All taxpayers may elect to amortize or not to amortize, as they choose, premium on fully taxable bonds This includes all bonds of ordinary business corporations

Amortization of premiums on partially tax-exempt bonds is mandatory for corporate investors and elective for individual investors In this instance, amortization of premium, in addition to reducing both the taxable income and the basis of the bonds, also effects a reduction of the credit for interest on certain obligations of the United States and its instrumentalities allowed for normal tax purposes

All taxpayers are required to amortize premiums on wholly tax-exempt bonds Since interest on such bonds is not taxable the amortization of premiums on such bonds is not allowed as a deduction from income However, such amortization must be applied in reduction of the basis of the bonds

**Capital gains and losses** Investors are particularly interested in that part of the statute that refers to capital gains and losses, inasmuch as gains or losses on the sale or exchange of capital assets may materially change the amount of tax that would otherwise be due

Capital assets include all property held by the taxpayer (whether or not connected with his business) except (1) stock in trade, or other property held primarily for sale to customers in the ordinary course of trade, and (2) real property and depreciable property used in the taxpayer's business that is subject to depreciation for income tax purposes For most investors, the rule means that shares of stock, bonds, and land are capital assets

The law distinguishes between long-term and short-term gains and losses They are long-term if the property was held for more than six months, short-term, if held for not more than six months Individuals take short-term profits and losses into their taxable income in full, long-term items are taken in at 50 per cent of the actual amount Two peculiarities further distinguish the treatment of capital items (1) If the combined long and short-term items result in a net loss of more than $1,000, only that maximum amount can be applied as a deduction against ordinary income in any one year Any excess of loss over that figure is carried forward for five years for deduction purposes (Unlimited deduction of loss carried forward may be made from capital gains or not over a $1,000 deduction from ordinary income ) (2) The individual taxpayer is permitted to separate an excess of long-term capital gain over net short-term capital loss from his ordinary income, and if he finds a tax of 50 per cent on one half of such excess is less than the additional tax that would result from its inclusion in the regular tax computation, he may elect this lower alternative tax The taxpayer whose income is so large that it has reached a bracket in which the income tax on his ordinary income is more than 50 per cent will find it advantageous to elect this special tax treatment for any net long-term capital gain

Corporations include net capital gains in their total taxable income Both long- and short-term items are taken into account at 100 per cent of the actual amount However, if a corporation's net long-term capital gain exceeds its net short-term capital loss, if any, the corporation may elect to pay a tax of 25 per cent on such excess in lieu of the tax applicable to the excess if computed in the regular way A net capital loss is not deductible from ordinary income but is carried over for five years and offset against net capital gains, if any, in such years

In view of the significance of the length of time an asset has been held in the determination of the tax on a capital gain, it may be very important to distinguish between different certificates of the same issue of securities that were acquired at different times and at different prices The general rule is that when shares of stock are sold from lots purchased at different dates or at different prices and the identity of the lots cannot be determined, the stock sold shall be charged against the earliest purchases of such stock The inference is, of course, that if the stock can be identified, the taxpayer has the right to sell any shares that he chooses, and that the basis of such shares is to be used for determining gain or loss on the sale, regardless of the fact that he may retain other stock, which if sold, would result in a greater gain or a smaller loss

The general rule stated above is known as the "first in, first out" rule It may be applied either for or against the taxpayer For example, if the first purchase of stock happens to be the one made at the highest price, and the taxpayer desires to realize the smallest gain or the greatest loss, it would be to his advantage to permit this rule to operate rather than to identify the particular stock sold On the other hand, if the first purchase happened to be the one made at the lowest price, this rule would work to the taxpayer's disadvantage, and it would be advisable for him to identify the particular stock sold as being that purchased at the highest price

Where stock is registered in the taxpayer's name as purchased, identification consists of keeping a record of the number of each certificate representing a purchase on a certain date at a certain price, and of delivery, in making a sale, the certificate representing the cost that the taxpayer desires to use

**Nontaxable exchanges** The statute provides that certain exchanges shall not be subject to taxation Such exchanges include exchanges of (1) property held for productive use or investment for property of a like kind, (2) stock for stock of the same class of the same corporation, (3) stock or securities for other stock or securities pursuant to a plan of reorganization, where the property received consists solely of stock or securities in a corporation that is a party to the reorganization, (4) property for stock or securities by a corporation in pursuance of a plan of reorganization, where the property received consists solely of stock or securities in another corporation, a party to the reorganization, (5) property for stock or securities of a corporation, where, immediately after the transfer, the transferor or transferors of the property are in control of the corporation, "control" being defined as an 80 per cent ownership, and (6) property in connection with an involuntary conversion Where cash is received in addition to property, the gain, if any, may be recognized to the extent of the cash

The term "reorganization" means here: (1) a statutory merger or consolidation, or (2) the acquisition by one corporation, in exchange solely for all or part of its voting stock, of at least 80 per cent of the voting stock and at least 80 per cent of the total number of shares of all other classes of stock of another corporation, or of substantially all the properties of another corporation, or (3) a transfer by a corporation of all or part of its assets to another corporation, if immediately after the transfer the transferor or its stockholders or both are in control of the corporation to which the assets are transferred, "control," in this connection, meaning the ownership of stock possessing at least 80 per cent of the total voting power and at least 80 per cent of the total number of shares of all other classes of stock, or (4) a recapitalization, or (5) a mere change in identity, form, or place of organization, however effected

Certain exchanges effected in connection with court approved reorganization, receivership, and foreclosure proceedings, and certain exchanges made in obedience to orders of the Securities and Exchange Commission under Section 11 of the Public Utility Holding Company Act of 1935 are also nontaxable

**Stock dividends and rights.** When common stockholders receive pro rata additional shares of common stock as a stock dividend, and sometimes even preferred shares if no other preferred has been previously issued, they are deemed to receive no taxable income The guiding principle is that if the stockholder has the same proportionate interest in the corporation after the distribution as he had before, the distribution itself is nontaxable

The cost or other tax basis of the old shares is allocated between the old and new shares Hence, the stockholder may have a gain or loss when he sells either the old or new shares If other securities or property are distributed, the result is taxable dividend income

Stock rights, which permit a stockholder to purchase additional stock, may or may not result in taxable income In any event, the income does not arise until the exercise or sale of the right If the right gives the privilege to acquire stock that would not result in taxable income if that stock were distributed as a stock dividend, then the exercise does not create taxable income, as in the case of stock dividends, part of the cost or other basis of the old stock is allocated to the new stock If the right gives the privilege to acquire stock that would be taxable if distributed as a stock dividend, the exercise creates taxable income Whether the right is of a taxable or a nontaxable kind, its sale (as distinguished from exercise) may give rise to taxable income

**Federal taxation of corporate incomes.** For purposes of taxation, a corporation may be regarded as a mere "conduit" through which income passes to natural persons, or as a separate taxable entity. Despite the fact that the first view, which treats corporations as conduits and would render taxable only their undistributed net income, is admittedly the more just, the Federal Government, for fiscal and administrative reasons, has always treated corporations as persons, and taxed them accordingly. Since the balance of corporate income is taxed again like any other income when paid out as dividends to the stockholders, the income is doubly taxed. Because the corporation's income tax rate is higher than for many individual stockholders of moderate means, the tax burden is more than twice the tax they see when they make out their personal returns.

The ordinary domestic business corporation is subject to both a normal tax and surtax, which until recently were graduated when the taxable income was less than $50,000. In 1950, a flat rate applied to all net income over $25,000. Because the investing public invests mostly in the stock of larger corporations, any graduation is often ignored and only the flat corporate income tax above the point of graduation is considered. Thus, in 1949 and 1950 this combined rate was as follows:

| *Year* | *Total* | *Normal Tax* | *Surtax* |
|---|---|---|---|
| 1949 | 38%* | 14% | 24% |
| 1950 | 42%† | 23% | 19% |

* On income over $50,000
† On income over $25,000

The increase in 1950 was the result of tax legislation after the outbreak of war in Korea. In addition, the corporation "excess profits" tax was reinstituted in that year.

Another way the law discriminates against corporate owners of stock is in the provision whereby corporations are permitted to deduct only 85 per cent of the amount of dividends received from other taxable corporations. The result is to repeat the taxation of the same income as it passes through successive corporate "conduits."

During the war period, a special "excess profits" tax was enacted to skim off the bulk of any war-created corporation profits. Normal profits not subject to this tax were defined as the greater of actual average earnings during the four prewar years 1936–1939, a none too profitable period for many corporations, or a certain per cent (8 per cent or less) of the corporation's invested capital. The "normal" profits were also taxed at a high rate so that many corporations failed to earn as much during the war years as in ordinary years of prosperity in spite of a high rate of activity. The railroads were one of the industries to make substantially more. Their earnings had been so depressed in the prewar years as to make possible a considerable increase in earnings before reaching the "excess profits" level of return on invested capital. (See table on page 421 for actual rates earned by the railroads.)

As a result of the financial burden arising from our contribution to the United Nations war effort in Korea, the "excess profits" tax on corporation profits was revived in 1950. Because of changing rates and provisions, its effects upon corporate earning power will have to be studied for the particular industry and corporation.

Another corporation tax not ordinarily of significance is one upon any "improper accumulation of surplus," that is, upon retained earnings (current rather than past accumulations) for which the corporation can show no need. The tax strikes at avoiding or deferring dividends that would otherwise increase the income of the stockholder and so his personal income tax.

With an eye to minimizing tax avoidance, personal holding companies are not only subject to the ordinary corporation income tax but also to a penalty tax for failure to distribute earnings. This latter tax is 75 per cent on the first $2,000 and 85 per cent of any balance of undistributed earnings. The object is to prevent the accumulation of earnings that would be subject only to the corporation income tax levy. The personal holding company is typically an investment company owned by a few persons and their families.[2]

**The effect of income taxes on security yields.** Bonds of state and local governments and their other obligations have, up to the present, been entirely exempt from the Federal income tax but, as suggested above, might be made taxable. The passage of the Public Debt Act of 1941 provided that obligations of the Federal Government and its instrumentalities issued thereafter should be fully subject to federal income taxes. The only fully tax-exempt United States obligations now outstanding are small issues—the Panama Canal loan of 1961 and the Postal Savings bonds. In addition, exemption from the normal tax but not the surtax is accorded interest from Treasury bonds and United States Savings bonds issued prior to March 1, 1941, and Federal Housing Administration debentures issued on contracts entered into prior to the same date Exceptional treatment is given a principal sum of $5,000 of the first two classes of bonds when owned by an individual Exemption is given for surtax as well as normal tax for the income from this limited amount Because the normal tax is much higher for the corporation than the individual, a corporation, such as a commercial bank, derives more advantage from the partial exemption than does an individual

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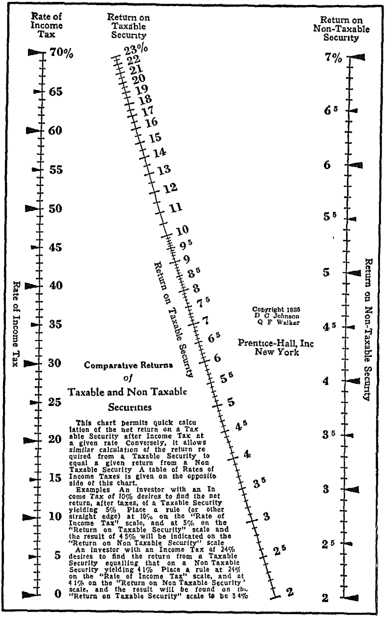
[2] A personal holding company is defined as any corporation 80 per cent of the gross income of which is derived from royalties, dividends, interest, annuities, and gains from the sale of stock or securities, and more than 50 per cent in value of the outstanding stock of which is owned directly or indirectly by not more than five individuals. In computing the number of stockholders, however, all members of a family in a direct line, as well as the spouse, brothers, sisters, and partners are counted as one person.

Prior to 1934 personal holding companies had frequently been used by individuals to decrease their liability for Federal income taxes. An individual would form a corporation and acquire its stock in exchange for his personal income-producing property. The corporation would then pay a corporate tax on the income received, but no surtax would be paid by the individual if the income were not distributed. A saving in taxes was therefore possible.

The existence of securities the income from which is totally or partially exempt from income taxes may influence the investment policy of the investor with a large income The reader may study the relative advantage of taxable and tax-exempt issues by examining the tax rates that apply to the particular taxpayer as they have been reported earlier in this chapter In general, if the net income from a taxable bond remaining after income taxes is less than the yield available from a tax-exempt bond of equivalent investment quality, the latter is a logical purchase In making a judgment, however, allowance must be made for possible changes in tax rates during the period in which the bond will be held Figure 20 on page 693 shows comparative returns of taxable and non-taxable securities

Some taxable corporation bonds are still outstanding that contain a so-called tax-free covenant wherein the debtor agrees to pay a certain portion of any tax levied upon the income of the instrument Such payments are usually limited to a tax up to 2 per cent When he collects such interest, the investor files an ownership certificate, which informs the debtor of the amount of tax to be paid, if any Such amounts paid upon the investor's Federal income tax are collected directly by the Government on the basis of the declarations in the ownership certificates When the investor makes out his tax return, he reports the interest as taxable income, but in computing his net tax liability he takes credit for these payments made in his behalf

**The effect of high income taxes on corporate dividend policies** Whenever the common stock is held by wealthy individuals who are in a position to influence dividend policy, the effect of heavy surtaxes upon the incomes of individuals is to encourage the reinvestment of corporate surpluses in the business rather than their distribution as dividends This practice is based on the hope that taxes will be reduced and on the desire to delay ultimate payment



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**Comparative Returns**
*of*
Taxable and Non Taxable
Securities

This chart permits quick calculation of the net return on a Taxable Security after Income Tax at a given rate Conversely, it allows *similar calculation of* the return required from a Taxable Security to equal a given return from a Non Taxable Security A table of Rates of Income Taxes is given on the opposite side of this chart.

Examples An investor with an Income *Tax of 10% desires to find* the net return, after taxes, of a Taxable Security yielding 5% Place a rule (or other straight edge) at 10% on the "Rate of Income Tax" scale, and at 5% on the "Return on Taxable Security" scale and the result of 4 5% will be indicated on the "Return on Non Taxable *Security*" scale

An investor with an Income Tax of 24% desires to find the return from a Taxable Security equalling that on a Non Taxable Security yielding 4 1% Place a rule at 24% on the "Rate of Income Tax" scale, and at 4 1% on the "Return on Non Taxable Security" scale, and the result will be found on the "Return on Taxable Security" scale to be 5 4%

Figure 20 Chart for Calculation of Comparative Returns of Taxable and Non Taxable Securities

until they are reduced Such delay may take the form of either a simple accumulation of surplus or a capitalization of surplus by stock dividends and split-ups[3] It is true, of course, that a penalty for improper accumulation of surplus may be incurred (see page 691), but the taxpayer corporation runs little risk where some need for the accumulation of profits can be shown

**State income taxes** Over one half of the states and the District of Columbia impose an income tax upon both individuals and corporations These states are[4]

Alabama
Arizona
Arkansas
California
Colorado
Georgia
Idaho
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maryland
Massachusetts
Minnesota
Mississippi
Missouri
Montana
New Mexico
New York
North Carolina
North Dakota
Oklahoma
Oregon
South Carolina
Tennessee
Utah
Vermont
Virginia
Wisconsin

In addition, Delaware and New Hampshire levy income taxes on individuals only, while Connecticut, Pennsylvania, and Rhode Island tax corporations but not individuals except, in Connecticut and Rhode Island, when their incomes are business incomes derived from sole proprietorships or partnerships Of the largest states, only New York uses this tax

The laws of these various states differ somewhat in respect to the determination of net taxable income and rates of taxation To consider in detail any of these laws is impossible here In general, however, it may be stated that such laws are patterned after the Federal law, except that invariably the rates are much lower than under the Federal tax The same problems in reference to the yield of tax-exempt versus taxable securities are thus created in states with income taxes as are found under the Federal income tax In such states, obligations and instrumentalities of the Federal Government, being entirely tax-exempt, enjoy an advantage over corporate issues that are taxable Similarly, where issues of resident corporations or bonds of the state itself or municipalities therein are tax-exempt, a differential is created in their favor, and accordingly they enjoy a so-called special market as compared with securities issued outside the state

**Distinction between estate and inheritance taxes.** Two kinds of taxes are commonly imposed on a decedent's property at death These taxes are known as estate and inheritance taxes, although they are often referred to as death duties or succession taxes An estate tax is levied on the entire property of the decedent, and theoretically is a tax "on the right of the decedent to transfer his property to the living" An inheritance tax, on the other hand, is levied on the individual shares of the decedent's beneficiaries, and is imposed "on the right of the beneficiary to receive the property of the dead" An estate or inheritance tax is not a tax on property, but is a tax on the transfer of property or on the right to transfer such property Practically, of course, both estate and inheritance taxes are capital levies that must be paid out of accumulated property This concept is particularly valid at a time like the present, when the rates of tax are so high as to make it impossible for an estate to pay more than a fraction of the death duties from income earned before distribution

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[3] Stock dividends, as such, are not taxable, see page 689

[4] As of December 31, 1950 For more detailed and up to date information, see Prentice Hall *State and Local Tax Service*

In the United States the inheritance tax form of succession duty has been generally applied by the states, while the Federal Government has enacted an estate tax In recent years, however, many of the states have levied supplementary estate taxes, while a few states, notably New York, impose only an estate tax

**History of Federal estate tax.** A small tax on legacies in the form of a stamp duty on the receipt thereof was effective in the United States between 1798 and 1802 Although succession taxes have been used by the Federal Government as war revenue measures, no such tax was used to finance either the War of 1812 or the Mexican War. The Civil War was financed partly by an inheritance tax; the Spanish-American War, by a tax that, in theory, was partly an estate tax and partly an inheritance tax The present Federal estate tax is the successor of a tax imposed under the act of 1916.

**The Federal estate tax** The present Federal estate tax is assessed under the Revenue Acts of 1926 and 1932 and subsequent amendments (now a part of the Internal Revenue Code as amended) Although legally two taxes are levied—a *basic* estate tax under the 1926 act and an *additional* estate tax under the 1932 act —for practical purposes the tax is that imposed by the 1932 act as amended [5]

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[5] The Federal estate tax law in force under the Revenue Act of 1926 provides that a credit shall be allowed for the amount of any estate, inheritance, legacy, or succession taxes actually paid to any state or territory, up to 80 per cent of the basic Federal estate tax In order to provide for increased estate taxation and at the same time to leave intact the credit provision of the Federal estate tax provisions of the 1926 Act, the Revenue Act of 1932 merely amended certain sections of the Federal estate tax in force under the 1926 Act, and provided for an increase in estate taxation by the passage of the additional estate tax law In effect, the additional estate tax law, as amended, increases the rates and makes the tax applicable to all estates of residents in excess of $60,000, instead of in excess of $100,000, as under the 1926 act. The 80 per cent credit for state death duties is allowed not as a percentage of the total tax, but only as a percentage of the basic tax as computed under the 1926 Act

A decedent's estate is taxable in full, not at the time a will is made but at the time the decedent dies, except that where the executor so elects, the estate assets (with certain exceptions) may be valued as of a date one year after death Ordinarily, therefore, investors are interested only in the current law and in the changes that are likely to be made in that law As used for purposes of the tax law, the term "estate" has a meaning different from that employed in accounting terminology, the gross estate of a citizen or resident includes not only the full value of all property—real and personal, tangible and intangible—that he may own at the time of death, but also any other property in which he has an interest, or which he previously transferred in such a manner as not to be relieved from liability for the estate tax Real estate situated in foreign countries, however, cannot be subjected to the tax In the case of nonresident aliens, only property located within the United States (including stock of domestic corporations and securities of any corporation where the tangible evidence thereof is situated in the United States, but not including money deposited in domestic banks, unless the decedent was engaged in business in this country, or proceeds of life insurance received from domestic corporations) may be taxed, regardless of how it may be transferred

The tax applies not only to property transferred by will or under the intestate laws, but also to transfers of an interest in dower or curtesy, an interest in a joint tenancy or an estate by the entirety, to a transfer made in contemplation of death or intended to take effect in possession or enjoyment at or after death, to transfers in trust or otherwise where the decedent retained any income or the right to designate the person who should receive the income, or where the enjoyment was subject at death to any change through the exercise by the decedent of a power to alter, amend, or revoke, to transfers arising from the exercise or nonexercise of powers of appointment (other than certain restricted powers), and to transfers of life insurance proceeds payable to or for the benefit of the decedent's estate and to transfers of other life insurance proceeds, if the decedent paid the premiums or possessed incidents of ownership[6]

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[6] Where several persons own the same piece of property and the survivors are to take the interest of a decedent owner, the estate is said to be a joint estate Property held in this way by husband and wife is said to be held "by the entirety" If *A* gives property to *B* for *B's* life and permits *B* to nominate the person who shall receive it upon *B's* death, *B* is said to have a power of appointment over the property If the property is within the taxing jurisdiction of the United States, its transfer upon the death of *B* is taxable in *B's* estate For a complete discussion of all current problems respecting estate and inheritance taxes, see the Prentice-Hall *Federal Tax Service* or *Inheritance and Transfer Tax Service*

TABLE FOR COMPUTATION OF ESTATE TAX

| (A) | (B) | (1) | | (2) | |
|---|---|---|---|---|---|
| *Net estate equaling—* | *Net estate not exceeding—* | *For basic estate tax* | | *For total gross taxes (basic and additional) (Tentative Tax)* | |
| | | *Tax on amount in column (A)* | *Rate of tax on excess over amount in column (A)* | *Tax on amount in column (A)* | *Rate of tax on excess over amount in column (A)* |
| | | | *Percent* | | *Percent* |
| | $5,000 | | 1 | | 3 |
| $5,000 | 10,000 | $50 | 1 | $150 | 7 |
| 10,000 | 20,000 | 100 | 1 | 500 | 11 |
| 20,000 | 30,000 | 200 | 1 | 1,600 | 14 |
| 30,000 | 40,000 | 300 | 1 | 3,000 | 18 |
| 40,000 | 50,000 | 400 | 1 | 4,800 | 22 |
| 50 000 | 60,000 | 500 | 2 | 7,000 | 25 |
| 60,000 | 100,000 | 700 | 2 | 9,500 | 28 |
| 100,000 | 200,000 | 1,500 | 3 | 20,700 | 30 |
| 200,000 | 250,000 | 4,500 | 4 | 50,700 | 30 |
| 250,000 | 400,000 | 6,500 | 4 | 65,700 | 32 |
| 400,000 | 500,000 | 12,500 | 5 | 113,700 | 32 |
| 500,000 | 600,000 | 17,500 | 5 | 145,700 | 35 |
| 600,000 | 750,000 | 22,500 | 6 | 180,700 | 35 |
| 750,000 | 800,000 | 31,500 | 6 | 233,200 | 37 |
| 800,000 | 1,000,000 | 34,500 | 7 | 251,700 | 37 |
| 1,000,000 | 1,250,000 | 48,500 | 8 | 325,700 | 39 |
| 1,250,000 | 1,500,000 | 68,500 | 8 | 423,200 | 42 |
| 1,500,000 | 2,000,000 | 88,500 | 9 | 528,200 | 45 |
| 2,000,000 | 2,500,000 | 133,500 | 10 | 753,200 | 49 |
| 2,500,000 | 3,000,000 | 183,500 | 11 | 998,200 | 53 |
| 3,000,000 | 3,500,000 | 238,500 | 12 | 1,263,200 | 56 |
| 3,500,000 | 4,000,000 | 298,500 | 13 | 1 543,200 | 59 |
| 4,000,000 | 5,000,000 | 363,500 | 14 | 1 838,200 | 63 |
| 5,000,000 | 6,000,000 | 503,500 | 15 | 2,468,200 | 67 |
| 6,000,000 | 7,000,000 | 653,500 | 16 | 3,138,200 | 70 |
| 7,000,000 | 8,000,000 | 813,500 | 17 | 3,838,200 | 73 |
| 8,000,000 | 9,000,000 | 983,500 | 18 | 4,568,200 | 76 |
| 9,000,000 | 10,000,000 | 1,163,500 | 19 | 5,328,200 | 76 |
| 10,000,000 | | 1,353,500 | 20 | 6,088,200 | 77 |

**Tax on net estate** For purposes of the tax, the gross estate of citizens and residents of the United States is diminished by certain authorized deductions, among which are the following funeral and administration expenses (including attorney's fees), debts of the decedent and claims against his estate, gifts for public, charitable, religious, and similar uses, a prorated amount of the value of certain previously taxed property, certain gifts to the decedent's surviving spouse and a specific exemption of $60,000 [7] The tax imposed is only upon the remainder, or net estate In the case of nonresidents who are not citizens of the United States, the net estate is determined by subtracting the same items from the gross estate as was done in the case of residents and citizens, except that only a proportionate amount of the debts, expenses, and fees may be deducted, a specific exemption of only $2,000 may be taken, only gifts to charities and eleemosynary institutions located within the United States are deductible, and no deduction is permitted for gifts to the decedent's surviving spouse

**Rates of Federal estate tax** Under the Internal Revenue Code as amended, the additional estate tax begins to operate at a 3 per cent rate on the first $5,000 of the net estate, increasing up to 77 per cent on amounts of the net estate in excess of $50,000,000 The table on page 697 gives the current rates of tax for both the basic and the additional estate tax These rates became effective after September 20, 1941

**The Federal gift tax.** A gift tax was first imposed in the United States by the Revenue Act of 1924, but this act was repealed in 1926 The present gift tax is imposed by the Revenue Act of 1932 and subsequent amendments (now a part of the Internal Revenue Code as amended)

The Federal gift tax is a supplement to the estate tax, designed to discourage the making of gifts during life in order to avoid the payment of estate tax The law imposes a tax that approaches (equivalent to about three fourths of) the amount of estate tax that would have been payable if the property given as a gift had constituted the donor's estate at his death

Rates under the gift tax, as under the estate tax, are graduated The rate of tax is measured by all taxable gifts made after June 7, 1932, the scheme of computation being adapted to tax gifts made over a period of years at approximately the same rate as though they had all been made within one year The table on page 699 gives the current rates of tax—the rates for computing the tax on gifts during 1942 and subsequent years

The gift tax applies to gifts made directly or indirectly by individuals, resident and nonresident, except that in the case of nonresident aliens only gifts of property situated within the United States are taxable In general, any transfer made by a citizen or resident subsequent to June 7, 1932, that reduces the liability of

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[7] Under the Revenue Act of 1926, the specific exemption is $100,000 instead of $60,000 See footnote 5 on page 695

RATES OF TAX UNDER THE FEDERAL GIFT TAX

| (A)<br>*Amount of net gifts equalling—* | (B)<br>*Amount of net gifts not exceeding—* | *Tax on amount in column* (A) | *Rate of tax on excess over amount in column* (A) |
|---|---|---|---|
| | | | *Percent* |
| — | $5,000 | — | 2¼ |
| $5,000 | 10,000 | $112 50 | 5¼ |
| 10,000 | 20,000 | 375 00 | 8¼ |
| 20,000 | 30,000 | 1,200 00 | 10½ |
| 30,000 | 40,000 | 2,250 00 | 13½ |
| 40,000 | 50,000 | 3,600 00 | 16½ |
| 50,000 | 60,000 | 5,250 00 | 18¾ |
| 60 000 | 100,000 | 7,125 00 | 21 |
| 100,000 | 250,000 | 15,525 00 | 22½ |
| 250,000 | 500,000 | 49,275 00 | 24 |
| 500 000 | 750,000 | 109,275 00 | 26¼ |
| 750,000 | 1,000,000 | 174,900 00 | 27¾ |
| 1,000,000 | 1,250,000 | 244,275 00 | 29¼ |
| 1,250,000 | 1,500,000 | 317,400 00 | 31½ |
| 1,500,000 | 2,000,000 | 396,150 00 | 33¾ |
| 2,000,000 | 2,500,000 | 564,900 00 | 36¾ |
| 2,500,000 | 3,000,000 | 748,650 00 | 39¾ |
| 3,000,000 | 3,500,000 | 947,400 00 | 42 |
| 3,500,000 | 4,000,000 | 1,157,400 00 | 44¼ |
| 4,000,000 | 5,000,000 | 1,378,650 00 | 47¼ |
| 5,000,000 | 6,000,000 | 1,851,150 00 | 50¼ |
| 6,000,000 | 7,000,000 | 2,353,650 00 | 52½ |
| 7,000,000 | 8,000,000 | 2,878,650 00 | 54¾ |
| 8,000,000 | 10,000,000 | 3,426,150 00 | 57 |
| 10,000,000 | | 4,566,150 00 | 57¾ |

the transferor for the estate tax is subject to the gift tax All transactions whereby property rights or interests are donatively passed or conferred upon another, regardless of the means or device employed, constitute gifts subject to tax However, the first $3,000 of gifts of present interests[8] to any one individual during any one calendar year is excluded in computing the taxable value of the gifts to that individual In addition, a specific exemption of $30,000 may be deducted from the taxable value of all gifts made during the life of the donor. This $30,000 exemption may be taken at any time, either in part or in full, but once the full amount is deducted, only the individual $3,000 exclusion will be allowed thereafter Gifts to charitable and eleemosynary institutions and certain gifts to the donor's spouse are exempt from tax In addition, the donor and his spouse, under certain circumstances, may treat gifts by either to third parties as if each had made one-half the gift

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[8] The exclusion does not apply to gifts of "future interests"

Gifts have three advantages over transfers at death (1) certain amounts of gifts are wholly untaxed, (2) the rates even upon taxed gifts are lower than for equal transfers made at death, and (3) the gift sums are taxed at the low end of the tax scale and removed from the highest brackets to which they would be subject under the estate tax It is also possible that gifts may be arranged at times when the market value of the transferred property is low, where death may strike at a time when values and tax rates are high However, the imposition of a gift tax is no guarantee that the gift property will be excluded from the gross estate

**State succession taxes.** All the states of the Union, except Nevada, levy either inheritance or estate taxes, or both All property within the jurisdiction of a state may be subjected to an inheritance or estate tax by such state Real property and tangible personal property are taxable only by the state in which they are located Intangible personal property, under a long line of decisions handed down by the United States Supreme Court, was formerly considered taxable only by the state in which the decedent had his domicile at the time of death However, in 1939 the Supreme Court reversed itself on this question and held that such property may be subjected to taxation by the state of the owner's domicile and by the state in which the property had acquired a "business situs "[9] The effect of these decisions is to permit the taxation of intangible property by more than one state For example, stock of corporations might be subject to tax by the state of incorporation and also by the state in which the owner of the stock is domiciled

Many states, in order to attract capital of investors, refuse to take advantage of the power to levy a death tax on the intangible property of non-residents This is accomplished in one of several ways

(1) by expressly excluding from the taxing status such property of non-residents,

(2) by the enactment of "reciprocal exemption status" to the effect that the state will not tax the intangible property of a non-resident if the state of his domicile does not tax such property of non-residents, or

(3) by an outright constitutional prohibition against taxation of intangibles of non-residents

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[9] For decisions on which these statements are based, and comments relative thereto, see Prentice Hall *Inheritance and Transfer Tax Service*

Intangible personal property includes bonds, notes, mortgages, stocks, and evidences of debt A bank deposit is intangible property, but cash and currency located in a safe deposit box are tangible personal property

**State gift taxes** Twelve states, California, Colorado, Louisiana, Minnesota, North Carolina, Oklahoma, Oregon, Rhode Island, Tennessee, Virginia, Washington, and Wisconsin at present impose a tax on transfers during life by gift For the most part, these laws are modeled after the inheritance tax laws of the respective states As a general rule, therefore, the scheme of classification, exemptions, and rates is the same as, or similar to, that used for inheritance tax purposes

**Reducing tax losses** Successful men keep their money well invested When they die, relatively small amounts of cash are found in their estates Usually the succession taxes are required to be paid within a comparatively short time, and consequently there is a demand for cash to be obtained from the sale of securities

One method of minimizing this difficulty, which is particularly effective where the estate does not reach into the highest tax brackets, is the use of life insurance Such insurance may be made payable either to the estate or to a trustee If it is payable to a trustee, some saving in Federal estate and state inheritance taxes may be effected by establishing the trust for the benefit of named individuals and by giving the fiduciary discretionary power to acquire securities belonging to the estate As the result of an arrangement of the latter type, the executor may secure sufficient cash to pay all estate liabilities, while the trust funds will be invested in securities that the decedent personally selected in the first instance

Another provision that is desirable, especially for estates where insurance becomes less effective simply because it too becomes a part of the taxable fund, is the creation of a liquid fund When the estate does not include investments convertible into ready cash, the need for money to pay necessary expenses and taxes may result in the sale of property at sacrifice prices Nonliquid real estate, mortgages, or security holdings that lack a ready market may shrink excessively in value when their sale is attempted in order to raise cash Under the circumstances, liquidity becomes increasingly important as the rate of tax to which the estate is subject goes higher Occasionally, good collateral value that will permit borrowing in order to raise cash may serve as a partial substitute for liquidity

**How succession taxes are calculated.** Anyone who intends to engage in investing as a profession must know how to calculate succession taxes, and must become familiar with the latest developments[10] Here we have space only for indicating in a general way the process of calculation The Federal estate tax must be computed under both the Revenue Act of 1926 and the Revenue Act of 1932 as amended (now a part of the Internal Revenue Code as amended) in order to obtain the net tax due the Federal Government after deduction of the credit for taxes paid to the states The process of calculation is as follows·

1 Determine the net estate subject to tax under the 1926 act See page 697.

2 Apply the rates shown for the Revenue Act of 1926 to the net estate obtained in the first step This gives the gross tax under that act See page 697 for basic estate tax

3 Deduct from the gross tax under the 1926 act (step 2) the sum of all inheritance and estate taxes actually paid to the states or territories, but if such state taxes exceed 80 per cent of the gross tax found in step 2, then deduct only 80 per cent of such gross tax This step gives the net tax under the 1926 act

4 Determine the net estate subject to the additional estate tax

5 Apply the rates shown for computing the additional tax (page 697) to the net estate found in step 4 The result is the so-called tentative tax under the additional estate tax

6 Deduct from the tentative tax (step 5) the gross tax under the 1926 act (step 2) The result is the additional estate tax imposed by the Revenue Act of 1932 as amended

7 Add to the additional estate tax (step 6) the net tax under the 1926 act (step 3) This step gives the total net Federal estate tax for which the estate is liable

Methods of calculating state succession duties vary from state to state, depending, in general, upon (1) whether the state tax is an inheritance tax, an estate tax, or a combination of both, (2) whether the exemptions, if any, are to be deducted from the first block of the taxable estate, or from the total estate, and (3) whether the decedent was a resident or a nonresident

State estate taxes are computed by applying the applicable rates to the net estate To calculate a state inheritance tax, however it is necessary to find the net share going to each beneficiary, to determine the relationship of the beneficiary to the decedent, and then to apply the prescribed rates of tax and the exemptions to the respective shares. For example, suppose that a decedent who was a resident of New Jersey left a net estate of $450,000, consisting of real and tangible personal property located in New Jersey, and bonds and stocks of Pennsylvania and New York corporations. The decedent's estate was divided equally among his wife, a son, and a brother. Since the decedent was a resident of New Jersey, his stocks and bonds have a taxable situs in New Jersey. Accordingly, the New Jersey inheritance tax would be computed as follows:

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[10] See the Prentice-Hall *Inheritance and Transfer Tax Service* The Service explains in detail how the taxes are computed and gives all the information necessary for the computation

| | | |
|---|---|---|
| TAX ON WIDOW'S SHARE OF $150,000 | | |
| 1% on $45,000 (first block of $50,000, less exemption of $5,000) | $ 450.00 | |
| 2% on next $50,000 | 1,000.00 | |
| 3% on next $50,000 | 1,500.00 | |
| Tax on Widow's Share | | $ 2,950.00 |
| TAX ON SON'S SHARE OF $150,000 | | |
| Same as for widow | | 2,950.00 |
| TAX ON BROTHER'S SHARE OF $150,000 | | |
| First $300,000 is taxable in full at 5%, therefore tax is 5% of $150,000, or | | 7,500.00 |
| Total Inheritance Tax Due New Jersey | | $13,400.00 |

**Some social consequences of inheritance taxation.** Although this is not the place to discuss the economic and social effects and bases of inheritance taxation, a few observations may reasonably be made. Succession taxation tends to be either a means of producing revenue or a means of causing the social distribution of wealth. If revenue is the only object, the basis of the tax may be either the protection that wealth receives or the ability of persons to pay the tax. Either basis justifies a reasonable progression of rates relative to the amount of property transmitted or received. If, however, the rates applied to amounts in the higher brackets become too burdensome, the temptation to evade becomes very great, and some migration of wealth and persons may be expected from areas of high taxation to jurisdictions imposing little or no tax. The existing high estate and income taxes have not caused any significant migration of wealthy men from the United States, but the high taxes imposed by some of the states have caused many individuals to establish their domicile in states where taxes are comparatively low. Some persons claim that high succession taxes tend to discourage the production of wealth and the growth of enterprise, the most that can be said on this point is that while reasonable grounds exist for such a belief, no statistical study has been made to support the theory Undoubtedly, many men go on accumulating wealth "for the fun of the game "

The present high estate and income taxes represent an attempt on the part of the Federal Government to secure a wider distribution of wealth The question of whether or not large aggregations of wealth should be broken up by heavy succession taxes in order to reduce the concentration of economic power in the hands of heirs who have not earned it is one of social policy In the main, a decision will depend upon the relative strength, on the one hand, of the desire to avoid the dissipation of national savings by a tax on "capital," and, on the other hand, of the fear of concentration of wealth through an unlimited system of inheritance

**Security issue and transfer taxes.** Practically all states require a corporation about to be organized to pay a tax in proportion to the capitalization Except in Florida and South Carolina, no further tax is called for when the stock is issued The United States, however, imposes a tax upon the issuance of stock [11] These taxes ordinarily have little significance for the investor, although they are important to the corporation

The Federal Government[12] and the states of Florida, Massachusetts, New York, Pennsylvania, South Carolina, and Texas levy a tax[13] upon the sale or transfer of stock For this reason, it is important that the investor make all transfers, where possible, in a state that does not impose a transfer tax, and that he make no unnecessary transfers that may involve a tax Under the Federal rules, for example

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[11] The Federal Government and the states of Florida and South Carolina also tax original issues of bonds For rates and regulations, see Prentice-Hall *Inheritance and Transfer Tax Service,* or Prentice Hall *State and Local Tax Service*

[12] The Federal Government also taxes transfers of bonds at the rate of 5 cents per $100 of face value

[13] Following are the rates of tax imposed by the various jurisdictions

*Federal Government* Five cents per $100 of face value, or on stock of no par value, five cents per share, if sold at $20 per share or more, the rate is six cents instead of five cents

*Florida* Ten cents on each $100 of face value, and on no par value stock, ten cents per share

*Massachusetts* Two cents per $100 of face value, and on no par value stock, two cents per share

*New York* One cent per share sold at less than $5, two cents per share sold at $5–$9 99, three cents per share sold at $10–$19 99, four cents per share sold at $20 or more, two cents per share for transfer other than by sale

*Pennsylvania* Two cents per $100 or fraction of market value, but not over two cents per $100 or fraction of face value, no par shares, not over two cents per share

*South Carolina* Four cents per $100 of face value or not more than two cents per share if no par

*Texas* Three and three-tenths cents per $100 of face value, and on no par value stock, three and three tenths cents per share.

> " where stock is transferred from the name of the decedent to the estate of the decedent, thus, From 'John Doe' to 'Estate of John Doe, deceased,' " the transfer is taxable, unless it is shown that, due to local law, the transfer is, in effect, to the executor or administrator, as such but "where stock is transferred from the name of the decedent, to the executor of the decedent's estate, thus, From 'John Doe' to 'Richard Roe, Executor of the Estate of John Doe, deceased,' " the transfer is not taxable [14]

**General property taxes** The general property tax, in its broadest form, is assessed on all property, real, tangible, and intangible Thus personal property is put on the same footing as real property, despite the fact that wide differences in earning power exist Unquestionably the general property tax is one of the most unscientific of all taxes Rates vary greatly between even contiguous communities, the amount of tax assessed on any person bears no relation either to his ability to pay or to the benefit that he receives from the Government Furthermore, and not without good reason, the general property tax is admittedly ineffective because of the widespread concealment of intangibles Let us suppose that the general property tax in a given locality is $20 per thousand, a rate that is not unusual At this rate a 3 per cent bond selling at par, if fully taxed, would yield only one per cent The rates generally imposed on real estate are in many cases confiscatory if applied to intangibles The inequity does not apply so generally to the tax on real estate because the community comes to regard the tax as a regular part of the cost of operation and to adjust rentals accordingly

**Classified property taxes.** A partial solution of this situation is attempted in some states by a so-called classified property tax In such states property is divided into two classes, tangible (including realty) and intangible, and a higher rate of tax is imposed on tangibles than on intangibles While the practical reason for such a distinction lies in the fact that the low rate of tax is an inducement to declare the property for tax purposes, there is an economic reason as well The taxation of tangible property in the state where it is located is not, *per se*, subject to criticism Where evidences of ownership in tangible property or equities therein are also taxed, unquestionably double taxation exists, but this does not necessarily create any legal invalidity, though it may be economically objectionable On the theory that some additional government functions are required by the existence of complex evidences of ownership in tangible property, the addition of a low tax rate on such evidences, even though double taxation does result, may be justified Among the states making such a distinction are Connecticut, Florida, Georgia, Indiana, Iowa, Kentucky, Michigan, Missouri, Nebraska, North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, and South Dakota The Pennsylvania county intangibles tax exemplifies this distinction Under this tax real property is subject to the higher rates, varying with the community, whereas intangible personal property of residents, except such as is exempt, is taxed at the rate of $4 per thousand [15]

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[14] For the complete rules see the Prentice Hall *Inheritance and Transfer Tax Service*

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[15] *Pennsylvania 4 Mills Tax* The assembly of the state, in 1913, passed an act designed to provide revenue for counties through the assessment of an annual tax at the rate of 4 mills for each dollar of value on certain classes of personal property The legislature later fixed additional rates of one mill for 1936 and 4 mills for 1937–1943 In 1947, a 4-mill tax was authorized and imposed in first-class school districts (Philadelphia and Pittsburgh) In 1949 some technical changes in classification were made, but the 4 mill tax was continued in Philadelphia school district, and 4 mills in Pittsburgh (2 mills city and 2 mills school district) The Philadelphia school district tax authority is limited to 1951 but will presumably be extended

The county tax applies, *inter alia,* to certain securities owned by residents of Pennsylvania Wherever possible, the State naturally goes to the source to collect this tax, but if it cannot be collected at the source, the act provides for payment by the owner of the security The value at which securities should be reported for taxation is the market value, not the par value No tax is assessed under this act upon bonds, notes, and the like, issued by the United States or Pennsylvania, or upon stock of corporations subject to the capital stock or franchise tax In a comparatively few cases, *the bonds issued by the counties, cities, boroughs, townships, school districts,* or incorporated districts of Pennsylvania need not be reported for taxation under this act In the case of bonds, notes, and other evidences of debt issued by a corporation of Pennsylvania, the corporation pays the county tax directly to the State Certain corporations of other states, registered to do business in Pennsylvania and actually doing business in that state, whose treasurers are residents of the state or perform the major portion of official duties in Pennsylvania, pay the tax directly and their securities are not taxed under this law, although required to be reported by the State and most county officials Bonds issued by a Pennsylvania corporation are not taxed, since the tax is deducted from the interest payments Residents of Pennsylvania who are taxable under this law are required to pay the 4 mills tax to the county and another 4 mills in Philadelphia and Pittsburgh, as described above, on all stocks, bonds, notes, and the like, except such as are exempt

In the case of states having a classified property tax, it is necessary for the investor to ascertain in detail the types of securities that are taxable and the types that are exempt Obligations of the Federal Government and of the instrumentalities thereof are always exempt Usually the stocks and bonds of domestic corporations are exempt on the ground that they are already taxed Securities of corporations located outside the state are usually taxable Local municipal bonds and state bonds are usually exempt, although not necessarily so In Rhode Island local municipal bonds are taxable The obligations of other states and their municipalities may or may not be taxed

For current information as to rates, laws, and regulations of administrative author-

Some of the states that impose personal income taxes exempt intangibles from the general property tax  Among such states are California,[16] Massachusetts, Minnesota, New York, Oregon, Utah, Vermont, and Wisconsin

In much the same way that some bonds contain a so-called tax-free covenant, whereby the issuing corporation agrees to pay the normal Federal income tax up to 2 or 4 per cent, other securities contain covenants in which the issuing company agrees to pay, under certain conditions, the intangible property tax to which reference has just been made on page 705  Such repayment is promised only when notice is given that the payment has been made by the investor, and then only when demand is made on the company in due form [17]

In the case of small investors, it is rarely necessary for companies making such agreements actually to make a refund, inasmuch as small investors often fail to return their intangibles for tax purposes, even in states where the 4 or 5 mill rate is in force  In many such states failure to make a return is not punishable, but in this event the individual will be required to pay a tax on whatever amount the tax officials wish to return for him  In many cases no return is ever filed

The intangible property tax, however, has a definite effect on the investment policies of individuals who own more than a nominal amount of securities  Thus, in Rhode Island, State of Rhode Island bonds are exempt from this tax, as are instrumentalities of the Federal Government  Municipal and other issues may be taxed, however, regardless of whether or not they are located within the state  Thus, a 2 per cent municipal bond, selling at par, will net only 1 6 per cent to the investor who makes a declaration  If State of Rhode Island bonds are selling on a basis higher than 1 60, they afford a better yield to such an individual than municipal issues selling to yield 2 per cent  Similarly, in the case of taxable corporation bonds, the investor, when making his selections, must

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ities, the investor should consult the Prentice-Hall *State and Local Tax Service* for the particular state involved  Inasmuch as tax laws are constantly being changed, a statement of the laws or rates in a work of this kind is of value chiefly for illustrative purposes

[16] In 1929 California adopted an intangibles tax in lieu of all other property taxes on such property  In 1935 this law was amended to provide that, after the adoption of a net income tax, such property (except solvent credits) should no longer be taxable  A net income tax was adopted by California later in the same year

[17] Indiana has attempted to overcome the difficulties inherent in a system that requires returns to be filed by enacting an intangibles privilege tax that must be paid by means of stamps affixed to the intangible  Any intangible that is not properly stamped or recorded cannot be enforced in the courts of Indiana.

compute the effect, not only of the Federal income tax, but also of the local property tax and the state income tax The reader should note that this apparently small difference is actually important A tax that reduces a yield from 2 to 1 60 per cent is the equivalent of an income tax of 20 per cent

**Situs of property for purposes of taxation.** To be constitutional, a tax must be levied on property within the jurisdiction of the taxing power It has long been recognized that real property is subject to the jurisdiction of and is taxable only by the state in which it is located

The problem of taxation of personal property is rendered exceedingly difficult by the diversity of practices and interpretations existing among the several states Intangibles, such as notes, bonds or certificates of stock, generally are subjected to property taxation by the state and district of the owner's domicile, even if the documents representing the intangibles are kept elsewhere However, intangibles used in the regular course of a business in another state may be deemed to have acquired a "business situs" there, enabling that state to tax them also For transfer tax purposes, the place where the securities are delivered, the place where the sales agreement is executed, or the place where the transfer is recorded on the company's books may be decisive in one case to give the state jurisdiction, whereas another state also may have jurisdiction through its sovereignty over the company issuing the securities In other words, dual or multiple taxation of intangibles can be exercised concurrently by various states to the extent that each has jurisdiction over (affords protection and benefits to) the particular subject of tax

Tangible personal property is subject to taxation where it is permanently located Thus, such property permanently located in another state cannot be taxed at the owner's domicile However, when the property has no permanent location, it can be taxed where the owner is domiciled

In summation, therefore, it may be stated that

1 Real and tangible personal property ordinarily may be subjected to a tax only by the state in which they are actually located

2 Intangible personal property may be taxed by the state of domicile of the owner, and by the state where it has attained a business situs or is afforded protection or benefits

**Conclusion** Detailed consideration of the economic effects of our various systems of taxation is hardly a subject for the present work The entire problem of taxation is an intricate one and properly belongs to a study of public finance We have attempted to treat here only the more important relations of taxation to the subject of investment

From the standpoint of the investor, the most important levies are the Federal income tax, the Federal estate tax, the Federal gift tax, the state income taxes, state intangibles taxes, and the state inheritance taxes The income taxes have an important bearing on the relative yields of various forms of securities, while the death duties and gift taxes greatly restrict the amount of property that one individual can give to another

As to the future course of taxation, one can hazard only a rough guess The huge increase in governmental debt during the depression of the 1930's and World War II plus the expansion of the functions and the budget of the Federal Government in peacetime, make the continuance of a high level of taxation probable The wide and increasing distribution of property in this country should reduce somewhat the prejudice against "property" income as distinguished from "earned" income The feeling is still strong, however, that investment income goes only to the rich, who should be taxed heavily Actually, an expanding army of retired persons have a stake in investment income Nevertheless, the political appeal of various state-supported welfare measures and services often leads the recipients to ignore the tax burden, especially when the latter is indirect and concealed An investment policy, particularly in the case of large funds, should give proper consideration to taxation in order to avoid excessive burdens not required by the law

# 25

# Business Conditions and Security Price Movements

**Daily price fluctuations** The first impression that one obtains as he approaches the practical field of investment is that price movements are uncoordinated and illogical In so far as the welter of daily or hourly fluctuations is concerned, this impression is justified An hour or a day spent in the trading or board room of any brokerage house, where the actual prices of listed securities are recorded immediately after each transaction, is interesting but not particularly instructive The prices of some securities will be seen to advance, while those of others decline, depending upon the immediate temper of the market Reversals occur almost at the same point of time Trading shifts from one group of securities to another Nor is the net result of a given day's trading of much greater significance It is true that, by reading the financial page of any of the larger metropolitan dailies, one gets a somewhat more orderly account of the day's trading Here will be given the high, the low, and the final prices of all listed securities and some of the more active unlisted ones, as well as the net changes in price as compared with the closing prices for the previous day In addition to prices for individual securities, the more important papers publish daily averages that show the average movement in selected groups of securities Most of these averages are so arranged as to show the daily movement of industrial stocks, railroad stocks, utility stocks, and high-grade bonds[1] An isolated study of these averages is also more or less confusing, in that advances and declines will be registered in respect to daily price changes, quite irrespective of the broader movements that may be in evidence at any given time

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[1] The *New York Times* publishes daily the average movement of 25 industrials, 25 rails, and 50 stocks combined, as well as one average for bond prices The *Wall Street Journal* publishes the Dow-Jones averages, which are based on the movements of 30 industrials, 20 rails, 20 public utilities, and 40 bonds Standard & Poor's Corporation publishes a wide range of daily, weekly, and monthly averages for various groups and subgroups of common stocks Moody's and Barron's also publish widely used series

**Minor and major cyclical movements.** When the daily price movements are charted over a period of years, however, two kinds of longer-term movements are evident First, minor waves that last for a few days or weeks and that, like the daily movements, are often difficult to explain, but sometimes appear as a response to current business events of fleeting significance, such as a strike, the passage of a piece of unfavorable legislation, the announcement of a dividend change by an important corporation, or some other bit of favorable or unfavorable news Examination of these minor, or secondary, swings will show them as parts of a longer-term trend lasting over a period of months, or even years These latter major, or primary, trends are closely identified with the so-called "cycles" in general business conditions, although they are not necessarily corresponding at every point Market students identify the major rising movements as primary bull markets, and the falling ones, as primary bear markets [2]

**Secular trends.** A complete cycle in security prices may be said to comprise two movements, the one upward and the other downward, although at the end of the completed cycle it is by no means true that prices are brought back to exactly the same level from which they started In fact, still a fourth, or long-term, movement, known as the "secular trend," is often present in security prices, as well as in other economic phenomena The existence of such a movement is often discernible in the case of bond prices, as well as in the prices of various groups of stocks The direction of this trend is generally determined by fundamental economic changes that are basically related to longer-term movements of gold in circulation, commodity price movements, interest rates, and population growth

**Absence of seasonal movements in security prices** Contrary to popular belief, there is no pronounced seasonal movement in security prices The reason is not hard to find If investors and speculators considered that stock prices always advanced, or were likely to advance, during any particular month, they would certainly anticipate such a rise by buying before it was scheduled

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[2] For a brief description of the three types of market movements, excluding the long term secular trend as a possible fourth type, see Dice, C A , and Eiteman, W J , *The Stock Market* (New York McGraw-Hill Book Co , 1941), Chapter XXIV A fuller account is given by Rhea, Robert, *The Dow Theory* (New York Barron's, 1932),

This very action on the part of buyers would advance the market before the time for the seasonal advance was predicted to occur Similarly, if stocks were destined to move downward at specified times of the year, a selling movement would anticipate the seasonal decline and hence upset all calculations The movement of the prices of stocks and bonds is dependent on basic changes in economic and business conditions and not on the passage of the seasons

**Individual and general price movements** Differences in prices or yields at any given time are generally explainable in terms of such differences in investment quality and characteristics as have been outlined in this and other books on investments But if attention is shifted to such differences in price and yields as take place from one period to another, the character of the individual security becomes less important as an explanation than those general business conditions that are changing attitudes in the money market and in the business community One might state the problem of investment as threefold (1) to select investments of suitable quality, (2) to favor those industries that are in the strongest position, and (3) to invest, in so far as possible, at times when conditions are favorable Potential gains from and practical limitations upon the timing of investments will be discussed in the course of this chapter Before we turn to a study of the general business factors, it is interesting to note that the improved data available on various lines of business permit a much readier comparison than was formerly possible With a wealth of material from income accounts, comparative profit performance can be analyzed In addition, composite stock prices for the different industries can be compared in order to ascertain which industries are making the best relative performance [8]

Despite the peculiarities of each individual company, the movements of all stocks show a very strong tendency to rise and fall together This uniformity is graphically stated in Figure 21 The diagram accompanying the price curve was constructed as follows the price movements of each year were tabulated so as to show in

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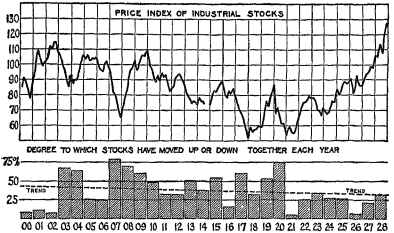
[8] For this purpose Standard & Poor's Company's weekly stock price indexes are very useful Group indexes are given for rails, utilities, banks, fire insurance companies, and industrials, indexes are also given for industrial sub-groups, such as agricultural machinery, chemicals, electrical equipment, and others

Rose, in his Appendix II, "Divergent Trends of Different Industries," presents 54 charts based on the Standard's indexes for the vears 1918–1933 By using the initial ratio of a given group of stock prices to all stock prices as bases, the subsequent relative market price performance is shown This relative trend is charted on a semilogarithmic, or ratio, scale See Rose, D C, *The Practical Application of Investment Management* (New York Harper & Bros 1933)



*Cleveland Trust Company Business Bulletin, February 15, 1929*

Figure 21 **Industrial Stock Prices and Degree to Which Stocks Have Moved Up and Down Together Each Year**

which month each stock reached its highest quotation and in which month it reached its lowest If any one year had shown such a degree of uniformity of movement that all the issues had recorded their highest prices in one of the twelve months and all had reached their lowest prices in another single month, the result would have been considered to constitute 100 per cent uniformity Such uniformity, however, was not shown in any year, although more than 78 per cent was shown in the panic year 1907 and nearly 75 per cent in 1920, a year of extreme decline in commodity prices It is interesting to note that prices of stocks tend to move in unison to a much greater degree during periods of declining prices than during periods of rising prices The diagram also reveals a slight tendency for stocks to show less uniformity in the later than in the earlier years As the number of companies with securities listed on the New York Stock Exchange has grown, smaller companies that are less representative of national conditions, more often devoted to the production of specialties, and more affected by changes in management, have probably been responsible for the greater diversity of price movements (Later studies are unavailable, but the day of the year upon which each stock reaches its top and bottom for the previous year may be found in the January issue of the *Bank and Quotation Record*)

**Price-determining factors** In a study of price movements the three chief price-determining factors for investments of all kinds must be kept in mind (1) the general market rate of interest for loans of negligible risk, (2) the degree of risk or uncertainty, and (3) the estimated size and timing of the expected future income stream[4] In the case of high-grade bonds and the choicest preferred stocks, the uncertainty is small, and the expected future income fixed, so that price fluctuations are almost entirely the result of changes in interest rates Sometimes changes in bond prices are said to *cause* yield changes, but it is more accurate to regard the latter as the cause and the former as the effect Bonds will tend to sell at prices that will give the buyer yields in line with other similar available commitments Bonds and preferred stocks of second-grade or lower quality are distinguished chiefly by the greater uncertainty of their future, not as to the amount of their claim but as to the probability of its payment Uncertainty is something that exists only in the minds of investors, and consequently it is not surprising to find that when times are good and optimism general, the yield difference among the various qualities of bonds is small as compared with that in periods of depression and pessimism[5]

But if yields fluctuate more at such times, so also will prices For this reason the purchaser of the better-grade issue not only reduces the possibility of default in interest but also reduces the likelihood of loss of principal in the event of resale to recover the same[6]

In the case of common stocks and real estate, and even of speculative bonds and preferred stocks, the amount of the income stream will be a matter of estimate Changes in the estimates of investors and speculators upon this point will be a major cause of price fluctuations among such holdings Indeed, it is the futurity element that often makes difficult the explanation of prices in terms of current income and earnings A common stock or piece of real estate

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[4] Other price determining factors that are usually constant for a given investment, and consequently are ignored in this discussion, are marketability, tax status, freedom from care, and legality for those investors who, like trustees, are restricted in their choice by law The varying influence of maturity is itself related to interest rate variations and therefore is discussed immediately below

[5] The tendency of bonds of different quality to diverge as conditions become worse and converge as conditions improve may be seen in a chart comparing the market movements of four groups of bonds, rated Aaa, Aa, A, and Baa *Moody's Manual of Investments, Industrials,* 1941, p a 38, and *Public Utilities,* 1949, p a 6

[6] Thus, the approximate fluctuations of the bonds referred to in the preceding footnote were as follows

| | PRICES | | | | |
|---|---|---|---|---|---|
| *Groups of Bonds* | *June, 1928* | *June, 1932* | *June, 1934* | *Decline* | *Rise* |
| Aaa | 99 | 78 | 95 | 21 | 17 |
| Aa | 98 | 64 | 86 | 34 | 22 |
| A | 97 | 47 | 70 | 50 | 23 |
| Baa | 95 | 37 | 63 | 58 | 26 |

will usually have some value even at a time when it is given no cash return and when the income account shows a deficit At such times the market value will represent the discounted hopes of the future This phenomenon of discounting unrealized possibilities explains why the dividend yield or even the rate earned on market price is not such a satisfactory index of investment quality as market yield is in the case of bonds Among bonds the net yield figure represents the total return, and a low return indicates high regard for quality on the part of the market[7] Among common stocks, however, a low return may merely represent excessive hopes for a purely speculative possibility In the last stages of a rampant bull market, even immediate earnings prospects may be largely ignored and purchases made solely in the hope of unloading at a high price to some even more optimistic speculator The more speculative and uncertain stocks may, under such circumstances, sell on a lower yield basis than the more steady-going investment issues that hold little mystery and do not excite the imagination The investor, then, particularly if he is interested in common stocks, will find a knowledge of the influence of interest rates and of business conditions important

**Bond yields and other interest rates** The market for capital funds is often thought of as being divided into two parts the long-term section being referred to as the capital market, the short-term section, as the money market In turn, these two markets may be regarded as consisting of a great many sub-markets, somewhat overlapping, but distinguished by geographical limits and the lending standards of different investor classes The close interrelation of even the two major divisions is shown in Figure 22 which shows high-grade bond yields and interest rates for four-to-six-months open-market prime commercial paper The former moves within a much narrower range than the latter, but the direction of movement is generally the same The difference in amplitude of movement can be explained in both investment and speculative terms Considered from the investment point of view, those lenders who have the option of either long- or short-term loans would be willing in a period of high rates to take a somewhat lower return for a period of years than they would if the advantage were only for a period of months Thus, if an average rate of return were 4 5 per cent, a yield of 5 5 per cent upon a 20-year bond might be as attractive as one of 8 per cent on a six-months note Similarly, a borrower would consider it more advantageous to pay a higher rate,

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[7] Convertible bonds or bonds with other valuable privileges, such as purchase warrants to subscribe for stock at a favorable price, are exceptions to this rule

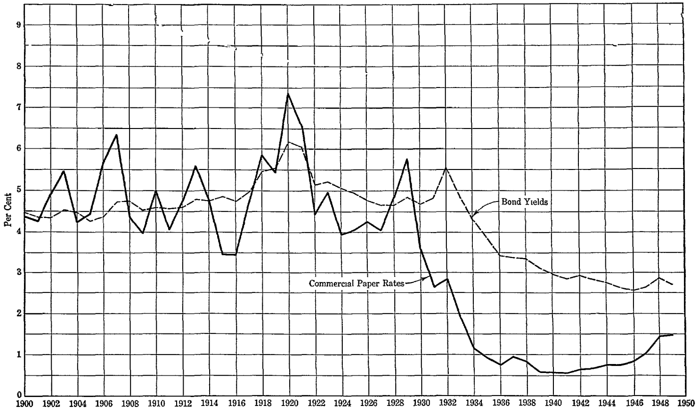

Figure 22 Comparison of High Grade Bond Yields and Prime Commercial Paper Rates.

such as 8 per cent. for a short period if he felt that he could probably renew on easier terms at the end of the term, than to pay a lower but still above-normal rate, such as 5 5 per cent, for a considerable number of years

A speculative point of view would recognize possibilities of appreciation or depreciation in bond prices when yields appear very high or very low High yields mean low prices, and a speculator would find that the potential appreciation plus interest coupons over a short period might well exceed the return from higher-yielding commercial paper Conversely, in a period of low yields, a commercial bank might prefer low-yield commercial paper to bonds that might suffer such price depreciation as would more than counterbalance the latter's higher current return The prolonged depression of short-term yields since 1935 has been motivated by the fear that bond yields might return to a higher level comparable to the historical past Both the investment and the speculative explanations of the difference in amplitude of movement between short- and long-term interest rates are probably effective

A closer examination of various interest rates would show further differences, related to those discussed If the Figure showed monthly data, greater fluctuations would appear than those now lumped together in annual averages Call money rates, which are set from day to day, would show even more violent fluctuation than commercial paper rates Loans made by banks to their own customers, so-called over-the-counter loans, would show less variation from time to time than open-market rates Short-term bonds would tend to show yield variations more like those of commercial paper than of long-term bonds The yields of short-term Governments have paralleled commercial-paper rates since they came into the market in World War I and have become the most important short-term open-market investment [8]

These fluctuations in interest rates can be explained in the abstract terms of supply and demand for loanable funds On the supply side are the savings of individuals and corporations, and in some periods the expansion of bank credit, made possible by purchases of Governments by the Federal Reserve banks, gold imports, lowered reserve requirements for banks, or devaluation of the currency that frees gold for use as additional banking reserves On the demand side are not only the requirements of would-be borrowers, but such loans as are returned to the market by resales of parties who wish to recover principal for purposes other than relending, and in periods of bank credit contraction, the funds recovered by banks seeking to improve their reserve position

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[8] The yield series for Government obligations might be thought to be better for representing the high grade rates than those in Figure 22 Unfortunately, suitable obligations were unavailable prior to World War I, and since then the published series are markedly affected by changes in the average maturity of the obligations used and sometimes by differences in tax status For an extended discussion of the American money market, see Riefler, Winfield W, *Money Rates and Money Markets in the United States* (New York Harper & Bros, 1930)

A more immediately useful, though perhaps less fundamental, explanation of interest rates is found in a comparison of such rates with the changes taking place in business activity The curve of interest rates has been shown to move up and down in correspondence with business but lagging after it, usually some ten to fifteen months, although occasionally it has reached its turning point after an even greater interval, such as eighteen months to two years[9] This lag suggests that for an interval after business revives from the trough of depression, it has enough idle funds to care for its current needs, or banks have such a surplus of funds, or both, that interest rates do not rise immediately Some partially frozen loans would also be in liquidation at this time On the other hand, after business activity passes its peak, a period may follow during which interest rates will be sustained by the pressure of banks seeking to liquidate loans and so strengthen their position, and of business concerns still requiring loans to pay for merchandise that is not moving into the hands of customers as rapidly as it should The abnormally easy money markets since the early 1930's have upset the relationship between interest rates and business activity Interest rates have, at least temporarily, become relatively unresponsive to changing business activity

The foregoing discussion indicates the manner in which high-grade bond prices are influenced by fluctuating business activity, or the business cycle, through the medium of interest rates Common stocks would presumably be more directly influenced, for the volume of business will be a primary factor in determining business profits—the chief factor that gives a stock its value Before passing to a discussion of common stocks and their price movements, we may consider briefly bonds and preferred stocks that are not of the best investment quality In general, their position is such that their standing is sensitive to changes in earnings As a result, their fluctuations are usually found to correspond more closely with those of the stock market than with those of the high-grade bond market

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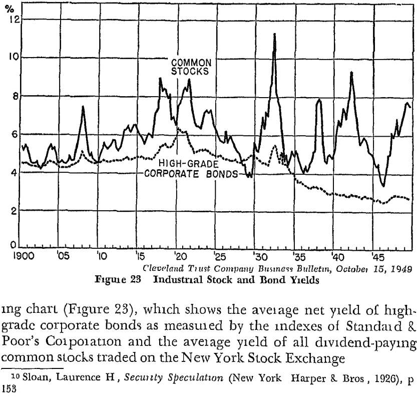
[9] Snyder, Carl, *Business Cycles and Business Measurements* (New York The Macmillan Co , 1927), Chapter XII, Chart 56, which compares an index of business and commercial paper rates, 1875–1926

Sloan points out this synchronization and gives data for the period 1914–1925, inclusive, which shows that the speculator in preferred stocks who tried to take advantage of cyclical troughs and peaks in the market would have made 85 3 per cent of the maximum possible gain if he had effected his purchases and sales at the low and high points for speculative common stocks, whereas, if he had used the turning points in the high-grade bond market, he would have realized but 56 2 per cent of the maximum [10]

**Common stock price fluctuations.** On general economic grounds, one might expect that major broad cyclical price movements of common stocks would show a rough correspondence to those of bonds The two instruments represent alternative forms of long-term investment, and any unusual disparity in relative yields would tend to produce a shifting of investments that would bring the two back to their former relationship An interesting test of the degree of yield relationship is shown in the accompanying chart (Figure 23), which shows the average net yield of high-grade corporate bonds as measured by the indexes of Standard & Poor's Corporation and the average yield of all dividend-paying common stocks traded on the New York Stock Exchange



*Cleveland Trust Company Business Bulletin, October 15, 1949*

**Figure 23 Industrial Stock and Bond Yields**

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[10] Sloan, Laurence H, *Security Speculation* (New York Harper & Bros, 1926), p 153

At first glance one is struck more by the disparities than the similarities The first impression received is of the striking fluctuations in stock yields, which represent some changes in dividends but even more violent changes in market price Closer study shows some significant correspondences There is the general upward trend of both series between 1900 and 1920 and the downward trend in the 1920's Various cyclical peaks and valleys show correspondence, particularly on such occasions as the panic of 1907 and the crisis of 1932–1933 Occasionally opposite movements may be found The most striking difference is found after 1935 when bond yields continued a downward drift begun after 1935, which carried bond yields to unprecedently low levels for the American bond market, while stock yields showed no declining trend The slightness of the rise in bond yields after 1945 reflects the controls of the money market by the Federal Reserve authorities Ordinarily, the extraordinary expansion of borrowing, such as marked the postwar boom, would have been expected to lift interest rates to higher levels

Stock yields showed no clear long-term trend in any direction after 1935 The fluctuations are more extreme than were found before In 1949, stock yields reached a figure around three times that of bond yields Such a ratio is found on only one other occasion, in 1942, when the war news was at its depressing worst and prices correspondingly low In August 1949, stock yields averaged 7 48 per cent, bond yields, 2 60 per cent

The prevailing average stock yields have run from 4 to 7 per cent with an average of 5 88 per cent for the half century Until 1930 the average bond yields ran generally from 4 to 5 per cent Thereafter the Government's easy money policies plus natural economic factors in the late 1930's brought about a declining yield trend that brought bond yields below 3 per cent in the 1940's The average bond yield figure for the half century was 4 26 per cent

In reading the chart, however, one must take care to avoid misinterpretations Since the income of bonds is fixed, such a method gives a satisfactory picture of bond market conditions Such a yield curve gives an upside-down picture of prices, since when yields rise, prices decline and vice versa[11] Stock yields, however, will reflect only an approximate reciprocal of the movements of stock prices, since yields of common stocks rise not only because of price declines but also because dividends may be increased Dividend income is changing and is not a constant as in bond yield calculation Furthermore, anticipation of coming dividend changes influences present prices and yields The stock yield series is also open to certain technical criticisms and should be employed with care It does not represent a constant group of stocks From time to time stocks are added and dropped as they initiate or stop dividend payments The average yield for any given month is obtained by dividing the sum of all dividends paid per share during the previous 12 months by the sum of all the prices of all dividend-paying common stocks traded on the New York Stock Exchange [12]

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[11] Such a bond price index actually has certain technical advantages over an average of actual bond prices The latter, if composed of bonds of medium or short maturity that are all either below or above par, will tend to "drift" toward par Furthermore, substitutions are more difficult in a "natural" bond price index because of differences in coupon and maturity between the substituted and original bonds

**Stocks and business activity** Earnings rather than dividends would undoubtedly be regarded by many as a more satisfactory and fundamental basis of market value, but unfortunately they are not so generally available on a quarterly basis [13] Earnings data might well explain some of the peculiarities of dividend yields The tendency for dividend changes to lag behind changes in earnings, and for earnings to provide a more generous margin over the dividend in good times and to fall below dividends in bad times, are factors that should be kept in mind when interpreting the dividend-to-market-price relations

Reference to any measure of stock prices extending over a period of years will show forcefully the preponderant influence of earnings, as compared with the interest rate, on price fluctuations Figures 24a and 24b show such wide fluctuations as could have resulted only from large changes in income Since earnings fluctuations are largely a function of the volume of business activity, these charts are given to make possible a comparison of the common fluctuations of activity and industrial stock prices with respect to their long-term trends [14] Figure 25 brings this story down to date

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[12] The authors are indebted for the data used in this discussion to the Cleveland Trust Company, which discussed this material and presented Figure 23 in its *Business Bulletin* for October 15, 1949, and gave their permission to reprint the chart

[13] One study has been made of the price-earnings ratio that used average monthly prices and earnings for the previous four quarters of the five years 1925–1929, inclusive These data showed an average multiple for eighty stocks of close to 10, from the beginning of 1925 to the middle of 1927 Thereafter, the multiple rose steadily until it reached 15 in April, 1928, at which level it remained until the crash of October, 1929 In the final three months of that year, the figure dropped back to slightly below 10 The data for the seven industrial sub groups showed considerable variation Elliott, David C, *A New Index of Equity Values* (Cleveland The Midland Bank, 1930)

[14] These charts are taken from the *Annalist*, August 13, 1926, pp 204, 205, where they serve to illustrate the first of two articles on "Stock Prices and Business Activity, 1884–1926," by Emerson W Axe and Ruth Houghton The shaded areas represent

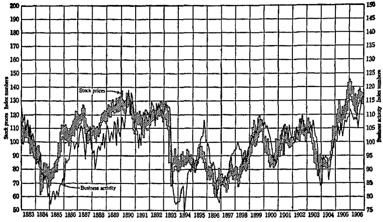

Figure 24a Stock Prices and Business Activity (1833–1906)

by comparing Standard and Poor's inclusive industrial stock index with the Federal Reserve index of industrial production

In Figure 25, the reader will note two periods during which industrial stock prices and industrial production appear to have been out of step[15] In the 1929 stock market boom, stock prices soared far beyond what would have been expected from the level of industrial production, even though it too reached a high figure Again, during World War II, a spread developed This time, however, stock prices lagged far behind soaring production This restraint upon the part of the stock market can be attributed to two chief factors (1) the heavy excess profits taxes kept industry from realizing profits such as might have been expected in normal times from such a huge volume of production, and (2) a widespread belief existed that such profits as did result might pass when

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the range between the monthly high and low prices of a group of leading industrial stocks Each series has received statistical treatment to remove seasonal variation and long-time trend, so that the cyclical movements alone might be shown

The data for these two series are shown for the following years in a large chart, which also pictures wholesale commodity prices, commercial paper rates, and bond yields for the period 1854–1934, inclusive See Axe, Emerson W, *Annalist*, Jan 18, 1935, pp 72–73 However, the figures for industrial stock prices in this chart are not shown as relatives of their trend, and consequently do not permit the close comparison of relationship made possible by the chart in the text above The article last cited discusses the interrelation of stock prices, interest rates, and commodity prices

[15] Some of the difference between Figures 24 and 25 is because no adjustment was made in the scale of the latter to bring the two series into the same range of fluctuation and to bring out the best "correlation" Even though such an adjustment had been attempted, the conclusions that follow would not be altered Figure 25 is reproduced by permission from Standard & Poor's Corporation, *The Outlook,* June 26, 1950, p 742

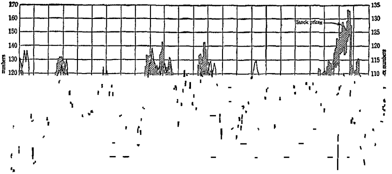

Figure 24b Stock Prices and Business Activity (1907–1930)

the temporary war influence was ended. Sentiment was still dampened by the poor earnings record of the 1930's.

These observations lead us to add that the influence of industrial production upon stock prices is through its effect upon profits. Profits are the immediate driving force behind stock prices. This relation can be understood from a reading of Figure 26, where the close relation of industrial production and profits are shown outside of the period of World War II. The comparison is between the Federal Reserve Board index of industrial production, used in the preceding chart, and the quarterly index of industrial profits compiled by Standard & Poor's Corporation.[16]

These charts show clearly the large fluctuations in business activity, commonly referred to as "business cycles."[17] Such variations in business affect the economic welfare in a grave manner. The amelioration or elimination of the distress caused by depression constitutes one of the most, if not the most, serious problems of economics. All social classes suffer, the investors among them. The latter are most seriously affected when they hold the more speculative types of investment, such as common stocks and real estate, but even some well-regarded securities of the more conserva-

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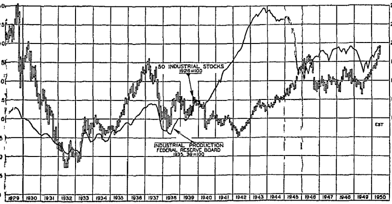
[16] In this chart a statistical adjustment was made in the scale to bring out the correlation in the earlier years. The chart indicates that the break even point shown in the years 1932–1933, where industrial profits were nil was when the industrial production index was at approximately 65. The index of profits rose or fell about 10 points for each rise or fall of 5 points in the production index.

[17] Other well-known indexes of business activity are compiled by the Federal Reserve Board, Standard & Poor's Corporation, the U S Department of Commerce, and Barron's. The Cleveland Trust Company publishes a chart of "American Business Activity since 1790." Activity is shown as relative to the long-term normal trend. The course of commodity prices is also illustrated. Data are available monthly to bring the chart up to date and revisions of the chart are published from time to time.



*Standard and Poor s Corporation The Outlook June 26, 1950*

**Figure 25 Industrial Stock Prices and Industrial Production**

tive type are usually upset in every major depression The most obvious point to note about such fluctuations would appear to be the large opportunities for gain or loss Not only are the potential profits alluring, but speculation, if successfully carried out, would presumably have a tendency to smooth out fluctuations by providing offerings of securities in boom markets and by creating buyers for depressed markets

**Business cycle theories.** Before the possibilities of utilizing these long swings as a part of an investment policy are discussed, a brief statement is appropriate as to the theories concerning the business cycle These irregular, wave-like movements of business activity are generally described as consisting of four periods—recovery, prosperity, recession, and depression The end of a period of prosperity may be marked by a crisis in which credit strain appears and liquidation is widespread and severe At such a time or during the depression, a panic may break out, marked by such phenomena as bank runs, suspension of specie payments, startling corporate failures, and closed security exchanges. Many early students devoted their chief attention to crisis and believed the cycle was regular and periodic The development of more exact statistical measurements has shown not only irregular periods, but a considerable amount of individuality in the conditions leading up to the crisis[18] Possibly the early belief in a uniform periodicity accounts for the numerous attempts to construct an all-embracing theory that would provide a universal explanation Despite the

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[18] Snyder, Carl, *Business Cycles and Business Measurements* (New York The Macmillan Co, 1927), p 233

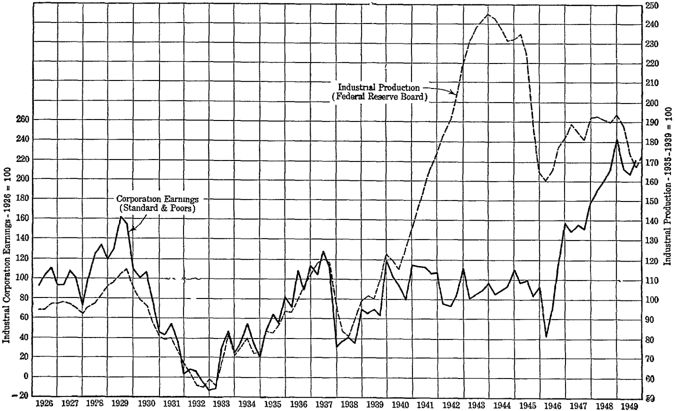

Figure 26 Industrial Production and Corporation Profits, 1926–1949.

huge importance of such considerations to investors, a treatment of all these theories or even any thorough analysis of business cycles are matters too broad for the scope of this volume[19] Two significant factors, however, may be mentioned and discussed briefly, not only because they have been stressed by students of the cycle as containing the explanation of such fluctuations, but also because an understanding of their economic importance is helpful in interpreting business conditions as they affect investments These two factors are the credit factor and the durable goods industries

**Bank credit and business fluctuations.** Attention has generally centered not upon general credit but upon bank credit The latter has been deemed particularly important because of the ability of banks, within limits, to manufacture credit and to liquidate it, thereby adding to or subtracting from the fund available for investment, which is ordinarily thought of as being derived solely from the national savings This elasticity in the volume of bank credit, which includes the purchase of bonds, and loans on real estate and on collateral, affects investment values directly and may both stimulate expansion in prosperity and force excessive liquidation in a period of recession and depression As a result, statistics bearing upon bank credit, such as interest rates, reserve ratios, international gold movements, and loans-to-deposits ratios, have received close attention The Harvard Committee on Economic Research found, from a study of economic statistics covering a period of 25 years before the World War I, that a decline of 1¼ per cent in rates on prime commercial paper (duly corrected for seasonal variation) from the high point in the money cycle was the signal for the inauguration of an upward movement in security prices Conversely, an increase of the same amount in interest rates was found to indicate the culmination point of a major cyclical advance in security prices[20] Credit stringency will undoubtedly continue to be a danger signal in the security markets, and ample bank credit a basis for potential expansion, but changes wrought by the introduction of the Federal Reserve banks have so altered conditions that the forecasting value of interest rates has been greatly diminished, if not actually lost The subjects of interest rates and bank credit will be taken up below when the practical possibilities of forecasting are considered

**Fluctuations in durable goods industries.** Along with the credit factor, the durable, or heavy, goods industries have been recognized as a prime element in the business cycle Consumption goods of a temporary nature, like food and clothing, are replaced frequently and tend to regularity, particularly so far as demand is concerned Their production and distribution fluctuate much less than is the case with durable goods, which consist of capital equipment, such as factories, railroads, utilities, and office buildings, and of some consumption goods, such as automobiles and residential buildings Such fluctuations as do occur in the volume of ordinary consumption goods and services can be traced largely to the unemployment and disorganization that mark the course of the durable goods industries Some irregularity would appear natural in these latter types of business Permanent improvements like railroads, utilities, and concrete highways require either no, or very infrequent, replacement But this natural change in demand might be expected to appear in the statistics of a large country like the United States as relatively moderate year-to-year changes *In practice, this natural irregularity is increased greatly* by (1) the dependence of these industries upon credit and confidence, (2) the economic organization that tends to lend itself to excesses, and (3) the indeterminate life of most durable goods, which permits the deferring of their replacement in a period of depression and pessimism

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[19] For a description of theories, see Estey, James A, *Business Cycles* (New York Prentice Hall, Inc, 2d edit, 1950), Part II For other references see page 832

[20] Presley, Fred Y, *The Economic Cycle, Its Application to Buying, Selling, Production, Investments* (Cambridge, Mass Harvard University Press, 1925), pp 27, 29

The problem of readjusting labor and resources when a major branch or all branches of the heavy goods industries are slowed down causes economic dislocations that would be serious even if they were uncomplicated by an unsatisfactory credit situation It should be noted in passing, however, that an important change has been in process ever since the Industrial Revolution The picture of technological unemployment (that is, unemployment caused by the progress of labor-saving invention) painted by some writers as an insoluble difficulty in the present economic order ignores a long record of successful change and readjustment throughout the past

While it is impossible in this limited discussion to justify our emphasis upon the credit factor and the durable goods industries, it is significant that most proposals for cyclical control have centered upon these two elements, although sometimes the reasons for emphasis have varied Some have suggested the control of money and bank credit as the most important, or even the only necessary, remedy (This control is often related to the price-level factor discussed below ) Others have believed that long-range planning by the major interests in the capital goods field is the more effective remedy Those who are skeptical of private planning of this sort, on the grounds that private capital investment can only respond profitably to consumers' demands, suggest as an ameliorative device the planning of public works for periods of depression.[21] Both public works and monetary controls are interrelated and are a part of Federal fiscal policy. Some prefer to discuss the problem from the latter point of view. They note that social security taxes and spending should also be a counteracting force to cyclical swings.

**Forecasting cyclical movements.** The investor is primarily concerned less with finding out the fundamental causes of the business cycle than with deciding whether or not a policy can be pursued that will permit him to profit from these swings. For him, cycles are in a class with natural phenomena, over which he has no control. As in the case of the mariner concerned with the weather, a profound knowledge of first causes is less important than the ability to interpret what may be superficial signs that have barometric significance. A variety of business indicators have been studied and accepted as having barometric character by different persons at different times.[22] Among these have been pig-iron production, blast furnaces in action, commodity prices, prices of certain industrial raw materials such as steel scrap and coke, profit margins, freight-car shortages, crops, gold movements, the export-import ratio, interest rates, bank deposit turnover, bond prices, and stock prices. None of these factors has proved to have a precise and invariable relation to the ups and downs of business activity or of the stock market. In this respect, minor cycles would be expected to be difficult to predict because of the mildness of the movements, but forecasters have frequently made erroneous predictions in regard to major movements as well. Perhaps the most generally helpful signs of the approaching end of a period of prosperity likely to lead to a major recession have been:

1. Unusual expansion in some leading durable goods industries, such as the construction of railroads, utility plants, highways, and commercial and residential buildings, which makes contraction of future operations appear probable. The importance of consumers'

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[21] Wolman, Leo, *Planning and Control of Public Works* (New York: National Bureau of Economic Research, Inc., 1930). Clark, John Maurice, *Strategic Factors in Business Cycles* (New York: National Bureau of Economic Research, Inc., 1934).

[22] Snyder, Carl, *Business Cycles and Business Measurements* (New York: The Macmillan Co., 1927), Chapter XIII; Persons, W. M., *Forecasting Business Cycles* (New York: John Wiley & Sons, 1931); Ayres, L. P., *Turning Points in Business Cycles* (New York: The Macmillan Co., 1939). For a recent discussion of the relation of various indexes to stock prices, see Roos, Chas. F., "Business Indexes and Stock Prices," *Commercial & Financial Chronicle*, 171:2564 (June 22, 1950).

durable goods, particularly automobiles and housing, should be recognized.[23] Three basic industries that are watched as indicators of both producers' and consumers' durable goods are the construction, automobile, and steel industries.

2. Common stock prices in a higher than usual relation to earnings, particularly when studied in the light of bond yields.

3. Credit strain, shown in high interest rates and falling bond prices.

4. Exceptional business optimism.

Depression lows, on the other hand, that provide the greatest security bargains are quite generally marked by the reverse conditions: easy credit and low interest rates, rising bond prices, an accumulation of deferred demand not only for new durable goods but also for neglected repairs and maintenance of existing equipment, common stock prices in a low ratio to income, and pessimism. However, to state the matter in this way should not mislead the reader into believing that forecasting of major security price movements is a simple problem. Every cycle is marked by minor fluctuations, the familiar saw-toothed curve of business statistics, which provide false starts that are readily mistaken for major turning points. The time relation between different related series of business statistics also varies considerably. Yet timing of purchases and sales is the essence of successful forecasting for security price swings. To predict an event one or two years too soon is likely to be fatal to the anticipated profits. That such errors are made even by those engaged in special study of this field is well known. In his study of the forecasts of general business activity by six very well-known organizations, Cox discusses these difficulties. His explanation of one of the sources of trouble is valuable at this point:[24]

> A recent mistake of certain services has been the expectation of too

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[23] The relative importance of consumers' durables may be seen in following comparison with producers' durables and the gross national product:

(Billions of Dollars)

| | *1929* | *1939* | *1949* |
|---|---|---|---|
| Gross national product | $103.8 | $91.3 | $257.4 |
| Consumers' durable goods | 9.4 | 6.7 | 24.4 |
| Producers' durable equipment | 6.4 | 4.6 | 19.7 |
| New construction | 7.8 | 4.9 | 17.3 |

Source: *Federal Reserve Bulletin*, April, 1950, p. 473.

[24] Cox, Garfield V., *An Appraisal of American Business Forecasts* (Chicago: University of Chicago Press, rev. ed., 1930), p. 73. The six organizations whose forecasts were studied were the Standard Statistics Company, Babson's Statistical Organization, Brookmire Economic Service, Harvard Economic Society, National City Bank, and Moody's Investors Service.

> great or too prompt effects from conditions of credit supply The error which marred most seriously the eleven-year record [November, 1918–December, 1929] under review was the failure to foresee the industrial recession of 1923–1924, and this mistake appears to have been due primarily to overconfidence in the power of abundant bank credit to sustain or even expand business activity regardless of other factors Again at the close of 1928 certain services doubted the ability of business to expand as it did in 1929 in the face of tight money Then when the recession finally arrived it was erroneously predicted that the strong banking position would suffice to prevent the decline from reaching a depression level

Another study, made by Cowles, confined solely to forecasts of the stock market outlook, casts serious doubts upon the virtues of any of the well-known devices A study was made of 16 financial services that made 7,500 recommendations from January 1, 1928, to July 1, 1932, and used various combinations of factors as a basis of forecasting The record was no better than might have been expected from mere chance Similarly, the results for 24 financial publications for the same period were somewhat poorer than would have been probable from random performance, and the successful records of the individual publications that were above the average were little, if any, better than might have been expected from chance

Perhaps the most interesting results were those reported for the predictions of a former well-known editor of a leading financial journal, who based his predictions upon a time-honored and highly respected theory Because of the special interest in this case, an excerpt is given here

> During 26 years of his incumbency Hamilton wrote 255 editorials which presented forecasts for the stock market based on the Dow Theory These were sufficiently definite to permit scoring as bullish, bearish, or doubtful This we did by a majority vote of five readers When doubtful we assumed that he abstained from trading When bullish it was assumed that he bought equal dollar amounts of the stocks included in the Dow-Jones railroad and industrial averages, and sold them only when he became bearish or doubtful When bearish we assumed that he sold short equal dollar amounts of these stocks and covered only when he became doubtful or bullish
>
> From December 1903 to December 1929, Hamilton, through the application of his forecasts to the stocks composing the Dow-Jones industrial averages, would have earned a return, including dividend and interest income, of 12 per cent per annum In the same period the stocks composing the industrial averages showed a return of 15 5 per cent per annum Hamilton therefore failed by an appreciable margin

to gain as much through his forecasting as he would have made by a continuous outright investment in the stocks composing the industrial averages. He exceeded by a wide margin, however, a supposedly normal investment return of about 5 per cent. Applying his forecasts to the stocks composing the Dow-Jones railroad averages, the result is an annual gain of 5.7 per cent while the railroad averages themselves show a return of 7.7 per cent.

Hamilton was long of stocks 55 per cent, short 16 per cent, and out of the market 29 per cent, of the 26 years under review. Counting only changes of position, he made bullish forecasts 29 times. Applying these to the industrial averages, 16 were profitable, 13 unprofitable. He announced bearish forecasts 23 times, 10 were profitable, 13 unprofitable. He advised 38 times that funds be withdrawn from the stock market, 19 of these withdrawals being profitable, 19 unprofitable. In all, 45 of his changes of position were unsuccessful, 45 successful. The application of the forecasts to the railroad averages confirms these conclusions except that in this case 41 changes of position were successful and 49 unsuccessful. For the period from 1909 to 1914 inclusive, when the industrial averages displayed what, in effect, was a horizontal trend, his hypothetical fund shrank 7.8 per cent per annum below what it would have been if loaned at 5 per cent interest. The result of applying his forecasts to the railroad averages deserves attention in view of the fact that this group displayed an almost horizontal secular trend for the 26 years under consideration. His average annual gain of 5.7 per cent in this group would have been approximately equalled, in the case of a continuous outright investment, by the dividend income.[25]

Because the foregoing study had to be presented within the space of a magazine article, it contains insufficient evidence upon which to base an independent evaluation of its merits. Aside from questions of statistical procedure, there is always the question of interpretation of the advice of forecasters, particularly where such advice takes the form of general comment rather than specific instructions to buy or sell.[26] But if the predictions are sufficiently ambiguous to permit of their misinterpretation in a study such as that just cited, their value for the average investor becomes doubtful. Consequently, without certifying as to the accuracy of Cowles' conclusions, we offer them here as a counter-balance to the much more voluminous literature that has pictured the golden profits potentially present in the past cyclical movements of the stock market and suggested that they were readily obtainable after either a limited amount of study of the economics involved or the purchase of a particular advisory system

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[25] Cowles, Alfred, 3rd, "Can Stock Market Forecasters Forecast?" *Econometrica*, July, 1933, pp. 314–316.

[26] Thus, opinions regarding a somewhat ambiguous forecast might differ. Cowles' method was to close out a position when, in the opinion of his jury of five, the forecast was uncertain.

It is important to note that the period covered by Cowles' study of financial services and publications was a brief one, 1928–1932, and that, while the time-honored signs of trouble in 1928 and of recovery in 1930–31, were eventually followed by the expected phenomena, the lags between barometric indications and the indicated events were unusually long, so that, from a practical point of view, forecasts were decidedly inaccurate

Three important factors have served to reduce, or at least suspend temporarily, the value of former guides to trade fluctuations (1) Interest rates have fallen to a record low level, at which they fluctuate but little with changes in the use of credit In the 1930's these low rates could be explained by the surplus of lendable funds as compared with lending opportunities In the 1940's, the onset of the war led to the close control of the credit situation by Federal Reserve authorities In spite of huge borrowing by the Government during the war and by business and real estate afterwards, rates were kept at a low level (2) Government spending on a huge scale in peacetime has become a major business influence Changes in the Government's surplus and deficit account can exercise as much weight as changes in private business spending (3) Indications are that some redistribution of incomes has taken place by income classes as the result for Federal taxation Persons with smaller incomes presumably supply a larger share of savings than formerly Typically these income groups favor investment through the financial institutions that dominate debt forms of investment Wealthy persons who invested more largely in common stocks have less surplus for investment after heavy personal income taxes If this analysis is correct, something of the widening spread between yields in the bond and stock markets is explained Such changes, together with a growing influence in the stock market of the new group of middle-class investors could greatly alter the value of past stock market relationships and performance for the interpretation of business conditions

**Long pull versus long swing** Controversy over the possibility of reaping profits from cyclical movements has resulted in two widely opposed attitudes upon investment policy Some contend that prediction is so uncertain a process that the majority of investors will do better to invest their funds as they become available without regard to business conditions, except in those cases where recoverability of principal is definitely required Such a policy is said to be investing for the "long pull" as opposed to investing for the "long swing"—that is, attempting to profit by buying securities in periods of depression and selling them in periods of boom. Advocacy of a long-pull policy is most common among those who are interested in bonds rather than stocks. Logical reasons for this point of view by bond buyers are apparent from the following considerations:

1. Investors in that group include life insurance companies, savings banks, trustees, and other holders of high-grade bonds who desire regularity of income to satisfy the needs of their position. A more irregular income, even if larger in total, would be much less satisfactory. Appreciation is highly uncertain as a source of year-by-year income.
2. The fluctuations of better-grade bonds are so much less than those of stocks that there is always a question as to whether any substantial gains would be realized by selling bonds at what were believed to be high prices, in the hope of repurchase at lower levels.
3. Finally, the very size of the holdings of larger institutional investors in this group makes it virtually impossible to shift holdings on such a grand scale.

The policy of purchasing to hold to maturity has even found expression in the accounting for bond holdings of life insurance companies. Such companies generally ignore market price fluctuations, except when a bond deteriorates in quality. The bond is originally placed on the books at cost, and the premium or discount is amortized regularly each year so that book value marches steadily from cost at the time of purchase towards par value at maturity.

Because of their demand liabilities, commercial banks have usually found it good practice to carry their bonds at cost or market price, whichever value is lower. Because banks are inclined to regard all holdings as being potentially available for liquidation, they are particularly concerned with bond price movements. This feeling has been reinforced since the early 1930's when bond prices mounted to previously unheard of highs and yields fell correspondingly. The purchase of relatively nonfluctuating short maturities grew in popularity during these years.

In order to permit banks to meet a bond market reaction without fatal effects upon their balance sheet, regulations were promulgated in 1938 that permitted members of the Federal Reserve System to carry bonds of investment quality on their books at cost even though the market was lower at the date of the balance sheet. (This rule does not rescind the practice that requires premiums to be amortized ) Investment quality is interpreted to mean bonds that fall in the four highest rating groups and unrated obligations of similar quality

Conservatively managed banks recognize, however, that whatever arbitrary valuation rules are adopted, they can realize only market values in the event that they are obliged to meet heavy withdrawals, and are guided accordingly Those banks that have substantial savings deposits may follow a somewhat less liquid investment policy There is some evidence that the commercial banks as a whole have pursued a general policy of liquidity for demand deposits and investment in longer-term bonds and in real estate mortgages roughly equal to savings deposits

**Long swings in common stocks** When attention is shifted from the bond market to the stock market, wider and hence more important price fluctuations are found The desirability of timing purchases becomes correspondingly greater Those who prefer a long-pull policy will find protection in keeping a sufficient fraction of their funds liquid so that any expected need for recovery of principal can be met without fear of adverse markets A similar rule would appear to be equally advisable for the long-swing investor since errors of judgment are easy to make The latter may also elect to keep a substantial backlog of permanent fixed-income securities in his portfolio His attempts to profit from cyclical price movements would be confined to common stocks, and possibly, in some cases, second-grade bonds and preferred stocks

Any objection that a long-swing policy is speculative and not suitable for an investor would be met by proponents with two statements

1 Any investment policy that ignores the absurdly low yields of common stocks prevailing during periods of inflated bull markets is unsound It may even be considered speculative in that a portion of the stock's purchase price is clearly not justified by income—that is, the investment consideration—but by speculative hopes

2 Any purchase of common stocks is necessarily a somewhat speculative commitment It is better to face this reality than to ignore it Even though it may be only partially successful, a plan of adjusting one's portfolio to changing business conditions is desirable

For those who grant the weight of these arguments and wish to adopt a long-swing policy, certain cautions are to be suggested

1 Margin purchases should be avoided The buyer who ac-

quires stocks on borrowed funds is betting on the shorter swings, and assumes that intermediate reactions will not close out his account and cause his holdings to be sold Many who bought stocks in the years 1930 to 1932 did so on margin, in the belief that recovery was imminent Even though their stocks were well selected, the ensuing declines frequently exhausted the original margin The purchaser who paid all cash could wait for time to vindicate his judgment of the long-run value of his selections

2 Short sales should be avoided They are always marginal transactions with possibilities of complete loss They constitute a tool of the trader and speculator rather than of the investor [27]

3 No attempts should be made to speculate on day-to-day or month-to-month cycles, or on even what some might regard as minor cycles Only when barometric signals are strongly apparent is it desirable to make changes in an investment position

4 Any policy should be adjusted to meet the possible needs of the beneficiaries of the investment fund Consideration should be given to such factors as the need for steady income and for recovery of principal, the temperament of the beneficiaries, and the ability to understand and bear risk

**Commodity price level changes.** For those who believe that changing commodity prices are the dominant factor in motivating the business cycle, the foregoing discussion may have seemed somewhat like a production of *Hamlet* in which the Prince of Denmark was omitted from the cast Some regard price level changes as an independent force, which may, however, play an important part in cyclical movements Thus J M Clark, in commenting on the depression conditions in the years 1931–1932, said "In the present instance, there was added to this and compounded with it a world-wide collapse in basic commodity prices which was no part of an ordinary business cycle Without this the more usual cyclical forces would have produced much milder results "[28] Others have believed that the cyclical movements could be very largely explained in terms of the changes in the commodity price level [29] Without attempting to dispose of the merits of this argument, the subject has been held over to this point for separate treatment in order to emphasize its peculiar importance to investors and to trace its major relations to different types of investors

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[27] It is possible that on rare occasions an investor might use the short sale He might wish an immediate sale of a security, the certificate for which was in a distant safety vault, or securities might be held which it was desirable not to dispose of directly, say, because of limited marketability A hedge against their decline might be effected by a short sale, provided a loss on the hedge could be borne or balanced by profits on the retained holdings See Dice, C A, and Eiteman, W J, *The Stock Market* (New York McGraw-Hill Book Co, 1941), Chapter XII

[28] Clark, J M, *Strategic Factors in Business Cycles* (New York National Bureau of Economic Research, Inc, 1934), p 168

[29] Fisher, Irving, "Our Unstable Dollar and the So called Business Cycle," *Journal of the American Statistical Association,* June, 1925, pp 179–202

The student of money and banking will remember that the commodity price level is connected with the business cycle through the bank credit factor previously discussed The circulating medium with which business is conducted in this country has gradually changed from hand-to-hand currency to bank deposits, which are transferred from person to person by checks Factors that expand bank credit, and hence bank deposits, tend to raise the price level, although this tendency may in practice be offset by counterinfluences Consequently, to the extent that low interest rates reflect unused bank reserves and potential expansion, they indicate a condition favorable to a higher price level [80] Conversely, high interest rates suggest a possible price level decline to the extent that they show probable bank credit contraction, a highly likely reaction, particularly when such contraction is accompanied by the export of gold or by an "unfavorable" trade balance pointing towards such export

On grounds of general economic theory, it may be objected that there need be no correspondence between changes in the volume of "deposit money" and in the price level A common argument is that a fixed amount of money in circulation can do almost any amount of money work simply by being spent more or less frequently The actual record of the velocity of bank deposit turnover as worked out by Carl Snyder for the period 1875–1926 shows a very good correspondence between the velocity factor and the cyclical fluctuation of an index of the volume of trade [81] A chart of the more recent movements of this velocity factor would show a continuance of relationship, although the relationship is obscured by the steady decline of velocity [82]

Under the pre-Federal Reserve banking mechanism, conditions were much more responsive to the gold factor than subsequently [83]

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[80] Bank credit expansion may, of course, raise security or real estate, rather than commodity, prices This possibility became an actuality in 1928 and 1929, and explains the importance attached to the concept of a "general" price level as distinct from that of commodities alone Snyder, Carl, "Commodity Prices versus General Price Level," *American Economic Review*, Sept, 1934, p 385

[81] See Snyder, Carl, *Business Cycles and Business Measurements* (New York The Macmillan Co, 1927), Chart 42, pp 152–153, and Chapter VII

[82] See turnover of demand deposits for cities other than New York in *Federal Reserve Charts on Bank Credit, Money Rates, and Business*, published by the Board of Governors, Washington, D C

[83] For a statement of the interrelation of money, check circulation, and prices in the pre-Federal Reserve days, see Kemmerer, E W, *Money and Credit Instruments in Their Relation to General Prices* (New York Henry Holt & Co, 1907), Chapter VIII

Not only was gold the basic reserve factor, but the volume of deposits tended to respond markedly to the amount of gold reserves When gold was imported, there was a strong tendency for deposits to expand, if not by loans then by bond purchases, in order that the excess reserve might be put to work With surplus reserves negligible, any gold exports necessarily meant, almost inevitably, a contraction of deposits and hence of credit, in order that the legal minimum requirements might be maintained

With the introduction of the Federal Reserve banks, gold ceased to be a direct agent and the direct reserve of the commercial banks The legal reserves of the latter banks now consisted of deposit balances on the books of the new Federal Reserve banks, and these banks in turn used gold for their reserve base No fixed relation, however, has appeared between the gold holdings of these central institutions and their deposit and other liabilities So long as their minimum ratio has not been reached, gold exports need not contract either the credit base that they supply for the commercial banks of the country or the deposits of these banks Similarly, gold imports may have little effect upon the volume of commercial bank reserves and deposits but may merely increase the reserve ratio of the Federal Reserve banks, assuming that such ratio has not already reached 100 per cent

This modification of the influence of gold upon the volume of our chief form of circulating medium—bank deposits—by the interpolation of the Federal Reserve banks explains the importance attached to the policy of those institutions in the discussions of monetary and credit control after about 1920 It also explains the skeptical attitude of leading monetary economists toward the program of Professor George Warren, the chief academic exponent of the reduction of the gold content of the dollar The efficacy of such a step to restore the price level to the objective set—the 1926 price level—depended upon an immediate and complete response of bank credit The scheme rested upon a philosophy of money and prices that virtually ignored the banking mechanism as a part of the money supply The chief immediate results of dollar devaluation upon prices were the fostering of speculation based upon inflation fears and the lifting of foreign exchange rates, which boosted the prices of export commodities entering the international market and of imports As a result of the almost universal departure of the nations of the world from the gold standard by the early 1930's and of the unusually high tariff and other barriers interfering with the flow of international trade, even this latter influence upon our domestic price level was greatly reduced The amount of our gold stock was changed from about 4 to 7 billion by the change in the gold content of the dollar in 1933, and from the beginning of 1934 to the end of 1940 it mounted to the huge total of almost $22 billion In spite of the fact that the effect of this increased credit base was partially neutralized by almost doubling minimum reserve requirements for member banks in the Federal Reserve System and by sterilization of gold through retention of considerable amounts in the Treasury, exceptional credit ease grew apace On December 31, 1940, member banks had legal reserves of $14 billion as against legal requirements of only $7 4 billion The excess of reserves of $6 6 billion made easy the expansion of bank credit during the early stages of World War II The excess reserves were "put to work" and deposits were expanded as the banks bought Government obligations Later, as the war progressed, the Federal Reserve banks purchased obligations, thereby creating additional member banks' reserves and keeping the credit situation easy As a result the huge war deficits were financed by the banking system to the extent that savings of individuals and institutions fell short of need

In the years immediately following the war, demand deposits fluctuated within relatively moderate limits The chief inflationary effects from monetary factors were attributable to the earlier deposit expansion, the influence of which had been neutralized during the war by price controls

After this brief and necessarily inadequate picture of the commercial banking machinery, without any attempt to cover the intricacies of the currency with which hand-to-hand payments are made, we return now to the main thread of the discussion The subject of money and banking is worthy of the most thorough study by the investor because of its relation to the general price structure and business stability[34] Price level movements are of investment interest chiefly because of their effect upon profits and the purchasing power of income

**Price level movements and bonds.** The immediate short-run influence of commodity price level movements upon the bond market is difficult to trace with any certainty Over the longer term, the influence of such movements is generally admitted After the Civil War, the United States experienced a generally downward trend of prices up to 1896, followed by a reversal that pushed prices up gradually until the advent of World War I, which event initiated a more abrupt rise that ended in the 1920 crash following the postwar inflation. From about 1873 to 1903, the general or secular trend of bond yields was downward, thereafter, until 1920, the trend was upward. In addition to the commodity price level, other influences of indeterminate weight may be mentioned. The post-Civil War period was marked by several events risk declined for the railroads, whose bonds were chiefly used as a measure of bond yields, considerable foreign funds flowed into the country, and domestic financial corporations—notably life insurance companies—were augmenting the supply of capital funds. With declining commodity prices, or, in other words, with increasing purchasing power for a fixed income, a fixed interest income would find more favor with investors. Similarly inflation would be expected to depress bond prices. Yet the rising commodity price level since 1933 has failed to influence the bond market in this way and bonds have moved to unprecedently high prices and low yields. It will be noted the long-term trend of bond yields has often been very slow to correlate with the price level trend but never before for such a long period.

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[34] The student is directed to such standard works as Bradford, F A, *Money and Banking* (New York Longmans, Green & Co, 16th ed, 1948), and Westerfield, Ray B, *Money, Credit and Banking* (New York Ronald Press Co, rev ed, 1947)

Probably the process of adjustment in bond yields to changes in purchasing power is an unconscious one, rather than the result of any exact calculation of advantage or disadvantage by investors. Two forces will be at work to produce lower yields when the trend of commodity prices is downward. (1) One force is the lowering of business profits, which would discourage common stock purchases and the promotion of any but the more promising enterprises. Poor return on stocks would tend to increase the relative demand for bonds, decreased promotional activity, to decrease the demand for funds generally. (2) After a time, a declining price trend would also discourage borrowing and encourage conservative capital structures. Over any considerable period of rising prices, these conditions would be reversed all forms of physically tangible property will tend to rise in dollar value, nominal profits will be easier to make, and the more daring business promoters will reap spectacular profits in proportion to their willingness and ability to borrow.

To avoid the depressing effect of a rising general price level upon fixed income securities, the most obvious course of action would appear to be the purchase of common stocks and real estate. Important groups of investors, however, are restricted to bonds, and their problem is to limit portfolio depreciation arising from bond depreciation. One safeguard is to purchase bonds of short- and medium-, rather than long-term, maturities Not only will the shorter maturities show less price fluctuation but, upon maturity, the funds may be invested at a higher return Commercial banks will find short-term loans preferable to bonds [85] Some bond buyers may purchase second-grade issues at such times on the theory that rising prices will so improve the earnings of the debtor that credit risk will be reduced Any marked reduction in risk may be so much more important than the declining level of interest rates as to result in a rise in the prices of such issues Bonds that are convertible into common stock, or that have stock purchase warrants attached, are so few in number as to offer a solution for but few investors

As regards those occasions when the outlook is for declining, rather than rising, bond yields, buyers will wish to acquire issues that will not be disturbed by maturity or refunding at a later time when yields have reached a lower level Long-term, non-callable issues would be most suitable The call feature has been included in most bonds of recent years, and a choice of noncallable issues is largely limited to issues of railroads put out some years ago Bonds with a low coupon rate or with redemption provisions that reduce the likelihood of a call at a time when yields are unfavorable to the investor offer a partial substitute for the noncallable type of issue To the extent that falling bond yields (and rising bond prices) are expected as a result of declining commodity prices, bonds must be carefully selected In the case of corporate issues the margin of safety should be substantial enough to withstand any recession of profits and values such as may be caused by declining prices Civil issues likewise require special care in selection at such a time because of the increased difficulty of bearing debt burden when the purchasing power of the dollar is rising

**Price level movements and common stocks.** The position of stocks has become more widely understood as a result of discussions since the first World War of their merits as an inflation hedge It is necessary, however, to distinguish between the different kinds of common stocks, as we shall see shortly When the price level is rising, inventory, equipment, and real estate tend to reflect the movement, and to rise in market price In such a period it becomes relatively easy to sell goods at a profit Merchandise appreciates on the shelves Whether or not such profits are sufficient to maintain the working capital in terms of purchasing power is another and more doubtful matter

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[85] When, as in the late 1930's, all banks consider short-term loans preferable and fear long-term bonds, their return may fall to a negligible rate and excess reserves accumulate In such circumstances the difference in yield between the short-term loans and bonds of medium maturity may largely discount the hazard of price decline for the latter

The corresponding hazard in a period of rising prices is that profits will be inadequate to cover the increase in price of assets as they are replaced This risk is increased by the heavy taxation of the "nominal" profits of inflation through levies aimed at "excess" profits as well as increased normal rates Fortunately, during World War II, when excess profits taxes were at a high level, price controls were relatively successful in preventing a rise in the price level The forces of inflation did not come into play until controls were released after the war When inflation does strike, common stocks may be less than a complete answer to the investor's problem Individual companies may be adversely affected or fail to keep pace with the rising price level They may be squeezed by taxes, wage demands, and a more rapid rise of costs than selling prices Corporations are especially subject to violent political attacks when the cost of living is rising although the stockholder trying to live on dividend income has the same purchasing power problem as the wage-earner living on wage income

Price fluctuations in a period of either rising or falling prices are accentuated for the common stockholder when his claim is preceded by bonds or preferred stocks The claims of these latter classes are constant, and any extra profits accruing from the use of their share of the contributed funds inure to the benefit of the common equity In times of decline the fixed claim becomes a burden that may not only absorb all of the income but may dissipate a portion of the principal supporting the common equity Long-term leases are often a fixed charge that operate much like funded debt In a time when general prices and real estate were rising, fixed rentals would be advantageous to stockholders[36]

The foregoing generalizations are most applicable to the common stocks of industrial corporations Other forces need to be considered in the case of the regulated public service and the financial companies Price level movements have a dual effect upon the railroads and the utilities Rising prices stimulate business activity if it is not already going ahead under full steam Any increase in general business activity will increase the volume of revenues of the public service companies In fact, railroad car loadings and electric power consumption are two of the most representative indica-

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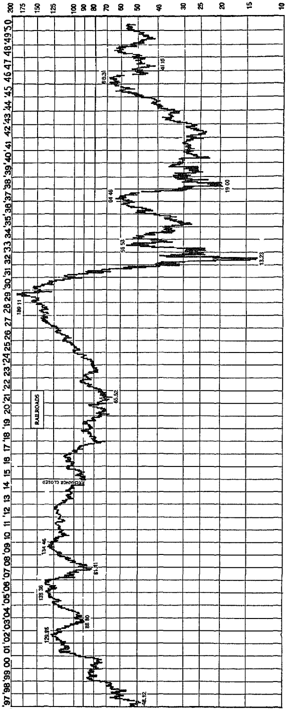
[36] Fixed rental leases were a chief cause of the troubles of the United Stores Realty Corp, real estate subsidiary of the United Cigar Stores Co of America (1932) and of Louis K Liggett Co (1933)


RAILROADS
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200 175 150 125 100 90 80 70 60 50 40 30 25 20 15 10
46.12
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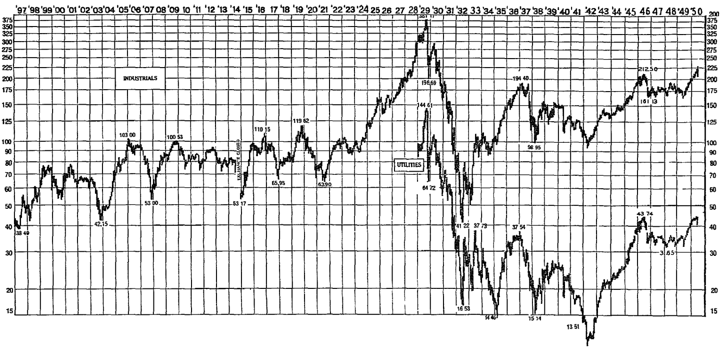

Figure 27 The Dow-Jones Averages 1897–1950 Monthly High and Low of Closing Averages (Logarithmic Scale)

tors of the volume of business in this country In so far, then, as price level movements influence the volume of business, they would affect industrials and public service corporations similarly The difference lies in the greater rigidity of the prices charged by the latter companies Because they are subject to regulation, their rates are changed but slowly to adjust to the changing costs of operation, consisting of wages and supplies, which fluctuate with prices in general This peculiarity explains the poor performance of railroad common stocks as compared with that of industrials during the decade 1910–1920 (see Figure 27)[37] This period was marked first by mildly, and then abruptly, rising prices as shown in the accompanying Figure 28[38] (The reciprocals of price movements give changes in the purchasing power of money, which are also shown in the same figure ) Again, after 1945 the same forces were at work, a rising price level boosting operating costs with laggard rate adjustments The effect of price level fluctuations upon public service corporations depends upon the extent to which they influence· (1) the volume of business, (2) the operating costs, and (3) the regulatory commission's attitude toward rate changes When prices are fairly stable, industrials and public utility stocks tend to fluctuate in response to much the same forces, mainly cyclical, as shown in the period 1920–1930 (Figure 28) A subordinate point to be mentioned is that rising prices are likely to protect utility valuations from attack, while declining prices are likely to lead to claims of an overvalued rate base

The response of the stock of financial corporations will be conditioned by the type of assets and by the amount of claims that are prior to the claim of the stockholder Investment companies and fire insurance companies generally have considerable common stock holdings For this reason their own equity issues should react favorably to rising commodity prices and unfavorably to falling commodity prices The degree to which they will respond should depend upon (1) the proportion of their assets invested in common stocks rather than bonds, (2) the kind of common stocks held, and (3) the extent to which they trade on equity, as measured by the debt-to-net-worth ratio Fire insurance companies are subject to the additional adverse influence of falling prices upon their

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[37] *The Dow-Jones Averages* (New York Barron's 13th ed , 1951) Only in recent years have the Dow-Jones averages been corrected to offset the reducing effect of stock dividends, and the like Other commonly used stock price indexes or averages are those of *The New York Times*, and of Standard and Poor's Corporation

[38] Index numbers from 1890 to the present time are by the U S Bureau of Labor Statistics, for prior years, by Professors G F Warren and F A Pearson These data are reported in Standard & Poor's *Trade and Securities*, Statistical Section

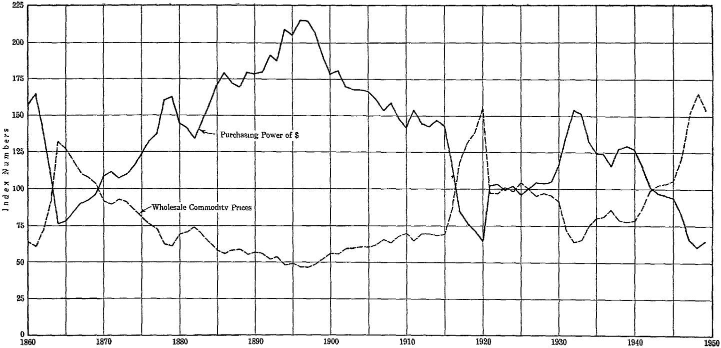

Figure 28 Indexes of Wholesale Commodity Prices and the Purchasing Power of the Dollar 1860–1949 (1926=100)

fire loss ratio, or the favorable influence of rising prices. When business is poor and prices are declining, the temptation to arson in order to collect insurance is increased, and is evident in the loss ratio.

The assets of life insurance companies and some commercial banks are largely bonds. As we have seen, to the extent that the price level factor alone is an influence, it is unfavorable to bonds when it is rising, and favorable when it is declining moderately enough so as not to raise the question of solvency of companies or governments issuing the bonds. Commercial banks have more generally been interested in short-term loans than in bonds but in recent years a lack of the former has made for a preponderance of bond holdings. The return on both has fallen, and this condition affects the gross earnings of the banks. The potentially fatal effect of this change has been counterbalanced, however, by the reduction of interest paid to depositors and an increase in the volume of service charges. Changes in the level of interest rates continue to occupy a central position in the outlook for bank earning power.

Real estate or real estate equities are in the same economic class as industrial equities, but their movement is likely to be more laggard. Real estate rentals are slow to adjust to changing conditions, and change in response to price level movements after wholesale and retail prices and wages have turned. When prices rise violently and landlords attempt to raise rents, regulation sometimes intervenes in response to the protests by hard-pressed families against the high cost of living. A short study of French experience in this field showed real estate income adjusted in part to price level changes when inflation was reducing the purchasing power of the franc in the period 1913–1926.[39] The record, while much better than that of bonds and loans, did not show a sufficient increase in return to offset wholly the rising price level.

In such a discussion of stocks and real estate as hedges against inflation, the conclusions of Leonard Ayres, of the Cleveland Trust Company, are of interest.[40]

> the best hedge against inflation in France and Germany was to invest in foreign securities.
>
> The next best was to buy the stocks of the soundest and most con-

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[39] Ives, Kenneth A., "Real Estate and Inflation," *Barron's*, July 1, 1935, p. 5. Based on the experience of the Compagnie d'Assurances Generales.

[40] *Commercial and Financial Chronicle*, June 29, 1935, p. 4311. Further statistical evidence may be obtained from an article on the effects of monetary depreciation on French securities. Lagrenée, Jacques, "La dépréciation monétaire et les voleurs mobilières françaises," *Revue d'Economie Politique*, Vol. 38 (Jan.–Fev., 1924), pp. 12–44.

servatively managed companies and to hold them Stock speculation during inflation proved to be even more difficult and hazardous than during ordinary times Investments in durable commodities proved profitable to users of the commodities, but speculation in the commodity markets was as dangerous as in the stock markets

One of the strange facts about these inflationary periods is that while they destroyed the values of most existing debts, they did not succeed in lightening the debt burdens of either the people as a whole, or of the corporations

Inflation destroys the value of bonds and mortgages and so confiscates the property of these holders of obligations and hands it over to the shareholders and the equity owners However, it introduces so many new economic difficulties that these share and equity holders are at once forced to incur new indebtedness so that when stabilization comes the problems of debt are about as troublesome as they were before, or even more so

Fears of inflation were aroused by the devaluation of the dollar in 1934 and continued by the unusual series of peace-time deficits that followed Both devaluation and deficit financing were inflationary measures However, the commodity price level was unresponsive because of the ample labor and productive facilities unemployed in every line, although commodity prices did show marked recovery between 1933 and 1940 The huge inflationary forces of war finance were restrained during the war years by unusually effective price controls These pent-up forces were released after 1945 as price controls were relaxed That the results were not more disruptive can be attributed to (1) the huge volume of production (Figure 26), (2) the restraint of business leaders in advancing prices because of their fears of repetition of the price crash of 1920 that followed World War I, and (3) the repeated warnings of the Federal Reserve authorities of the hazards of inflation

Certain factors point to the possibility of continuing uncertainty in the matter of the price level and business stability (1) The Federal Government continued to show an excess of expenditures over taxes during some of the years of greatest business activity in the late 1940's (2) It continued to stimulate housing construction at a time when the industry was already running at full blast High percentage loans were made possible while prices were highest by mortgage insurance guarantees of the Federal Housing Administration and the Veterans' Administration (3) Large bonuses to veterans were paid during the midst of the boom instead of being timed to occur during a period of low business activity (4) Extremely high price supports, both relatively and absolutely, were maintained for farm products, thereby encouraging very high rates of production Such stimulation of production has the effect of increasing the problem of supports when conditions are genuinely difficult

If federal fiscal policy is to ameliorate the swings of the business cycle and stabilize prices and business, it must aim at restraints in boom times in order to have the means to give support to conditions in depression times Support requires expansion of the government debt and the planning of public works for such dull periods

Because the future of prices depends so greatly upon unpredictable political activities, the future position of investors will be determined to a great extent by their willingness to change and meet conditions as they appear When Irving Fisher emphasized the importance of purchasing power and obtained wide attention for the idea, he exploded the generally accepted myth that bonds were the riskless investment[41] Purchasing power is the fundamental consideration in most investment, and the risk of losing purchasing power through a rising price level is present for the most gilt-edged bond With the recognition of this hazard, the art of investment admittedly becomes more complex, but also more realistic Just as recognition of the need for skillful analysis of individual securities leads one to the conclusion that an extensive knowledge of practical business affairs is valuable, so recognition of the investment influence of general business conditions—notably of the business cycle and of the unstable price level—demonstrates the value of an understanding of the subject of economics as it relates to both private and public finance

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[41] Fisher, Irving, *The Purchasing Power of Money* (New York The Macmillan Co, 1911) Popularization of the idea with respect to investments is found in Fisher, Irving, Kemmerer, E W, Brown, Harry G, *et al*, *How to Invest When Prices Are Rising* (Scranton, Pa G L Sumner & Co, 1912), and "When Are Gilt Edge Bonds Safe?" *Magazine of Wall Street*, April 25, 1925, p 1096 In this latter article, Fisher credits Walter E Lagerquist's *Investment Analysis* (New York The Macmillan Co, 1921) with being the first book on practical investments to mention the importance of changes in the purchasing power of the dollar, and credits A Vere Shaw's *Investment Counsel* (1922) with being the first to place the main emphasis on that factor.

# Part IV
# Investment Policy and Practice

# Chapter 26

## Investment Policy: Financial Institutions

A fitting conclusion for this work on investments is to draw together the threads of our discussion by plotting out those policies that have appeared to meet the requirements of the various kinds of investors. Both the underlying policy-making factors and the types of investments that practice shows have been suitable to effectuate those policies will be indicated. Much of the preceding chapters has been devoted to the study and methods of analysis of specific kinds of investments. Only in this way can we understand the qualities of the investment bricks and mortar with which the finished structure of an investment program is built. But in that study, frequent references were made to the customary investors in such securities or other property forms as well as to the motivation of those investors. Partly because of that coverage and partly because of the limitations of space, a summary rather than an exhaustive treatment is appropriate here.

The policies and practices of any of the various classes of investors, either institutional or individual, could be profitably given a book-length treatment. Many of these fields have been given such treatment as will be noted in the references for further study that are made later in this chapter. But such study of portfolio management is best undertaken after a fairly broad study of the kind that has been attempted here. An interest in such detailed works is ordinarily limited to those with a specialized professional need.

In this chapter, the general determinants of policy outlined in Chapter 4 are applied to the variety of investments described and analyzed in Chapters 7–20, inclusive, in order to arrive at the fundamental policies and practices of portfolio management. Attention is also given to the influence of such factors as taxation (Chapter 24) and the timing of investment purchases (Chapter 25) as they affect management.

The ensuing discussion falls into three broad divisions: (1) financial institutions, (2) trust funds, and (3) individuals.

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## Financial Institutions

The financial institutions whose leading importance dictates their coverage here are the insurance companies and the banks with some reference to the problems of the savings and loan association. The three chief influences that differentiate their policy are (1) the extent to which the funds they invest are received from liability sources that require fixed dollar investment values for the maintenance of solvency, (2) the need for liquidity, and (3) regulation by the government.

**1. Life insurance companies.** The importance of the sources of life insurance company funds can be seen from the figures taken from the liability side of their combined balance sheets, which are reasonably representative for the larger companies, even though important differences among individual companies do exist.

| | *1920* | *1930* | *1940* | *1945* | *1948* |
|---|---|---|---|---|---|
| | | | *(Per Cent)* | | |
| Liabilities | | | | | |
| Reserves, chiefly for life insurance and annuities | 86.6 | 86.0 | 88.5 | 86.3 | 86.8 |
| Other liabilities | 8.9 | 8.6 | 5.6 | 6.5 | 6.5 |
| Total liabilities | 95.5 | 94.6 | 94.1 | 92.8 | 93.3 |
| Surplus to policyholders | | | | | |
| Special, voluntary, contingent and similar reserves | — | — | 1.4 | 1.8 | 1.9 |
| Unassigned funds and capital | — | — | 4.5 | 5.4 | 4.8 |
| Total "surplus" | 4.5 | 5.4 | 5.9 | 7.2 | 6.7 |
| Dollar totals (millions) | 7,320 | 18,880 | 30,802 | 44,797 | 55,512 |
| Number of companies | 352 | 352 | 305 | 348 | 380 |

Source: Compiled from *Spectator Insurance Year Book* and *Proceedings of the Life Insurance Association of America*.

When, as in the year 1948, the "surplus to policyholders" or excess of book assets over liabilities represented 6.7 per cent of the total liabilities and surplus, the maximum shrinkage of counterbalancing assets that could be borne without insolvency would be limited to that figure. Any greater shrinkage would mean that asset values would fall short of covering the liabilities with all the serious consequences that might ensue. Here is the heart of the objection to investments of fluctuating value, such as most common stocks Ordinary market price fluctuations within periods as short as a few months are often much greater than this "margin of safety" provided by the cushion of surplus to policyholders

Advocates of common stock investments for life insurance companies have pointed to the fluctuations in market price of bond investments and the practice of ignoring such fluctuations so long as a given bond is regarded as sound Why not adopt some similar fixed valuation for common stocks, they ask? This argument by analogy ignores the bench mark of value provided in the par value that must be paid at maturity Where a debt investment is commonly held to maturity as a matter of policy the fluctuations have little significance Where a liquidity problem is present, as in the case of commercial bank demand deposits, the problem is still different For the latter, bond price fluctuations, even though caused by changes in prevailing money market rates rather than changes in credit quality, may be embarrassing where recovery of principal may be necessary before maturity But common stocks are characteristically fluctuating because of their varying income and are subject to a varying risk appraisal that causes large changes in the rate at which current income is capitalized by the market They lack any fixed valuation basis such as would make them suitable for a financial institution requiring stable dollar values for solvency

Some exceptions may be developed to the general rule that common stocks are unsuitable for investment by life insurance companies and similarly situated financial companies Exceptions may be argued for particular types of more stable stocks or they may be possible where sufficient surplus in particular life insurance companies makes a limited amount of risk of value fluctuation bearable Some common stocks in the public utility field, notably certain electric and telephone companies, might find a bench mark of long-run investment value in their book value as it is kept under present-day regulatory practice.[1] The argument would be that wherever the regulatory commission has used the book investment in tangible operating property at original cost less depreciation as the basis for allowing a "fair return" to the company, a fairly fixed value base exists Such a value base would be appropriate only where the company has shown an ability to earn and pay dividends, even in depression years, sufficient to cover the needs of the life company to cover its guaranteed reserve accumulation If purchases were made at prices in excess of the book value, the income should be sufficient to amortize any excess, much as in the case of a bond premium The desirability of setting up reserves from any excess rate of return over that on prime bonds to absorb losses would require attention Although investment analysts and economists refer to such excess return as "premium for risk," no systematic practice has arisen of setting aside such "premiums" to absorb losses that characteristically appear in years of business depression [2] The possibility of making an exception for utility common stocks has considerable interest because of the agitation on behalf of common stocks, which has arisen with the decline in interest rates The exception would also have special significance for the utility industry because it has been a field where equity capital has had to be raised by sales of stock In the industrial field, equity capital has been raised more largely by the retention of earnings

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[1] This problem has been analyzed in an unpublished doctoral thesis by Bion B Howard on "Public Utility Common Stocks as Possible Investments for Life Insurance Companies" (Northwestern University, Evanston, Ill, 1950)

In states that permit life insurance companies to invest in common stocks, a limitation of such holdings is often found based on total assets Thus, a limit of 5 or 10 per cent of total assets may be stipulated Some of the most important states, like New York, have an absolute prohibition against common stocks A restriction of holdings based on total assets ignores the more fundamental relation of the risk of value fluctuation to the cushion of surplus available to absorb such losses The figures given above are a composite for the industry Individual companies may deviate considerably from such averages The table itself shows important variations between years Thus, the cushion or "surplus" of 7 2 per cent in 1945 was much more substantial than the 4 5 per cent in 1920 Were the limit on common stock holdings based on this per cent, the 7 2 per cent would allow 60 per cent more holdings relative to assets than would the 4 5 per cent Sound policy would dictate that any financial institution should assume risks only in relation to the surplus available to absorb losses rather than in relation to its assets

The figures cited above suggest that even a limit of 10 per cent of assets invested in common stocks might well be excessive for the average company in times of high stock prices (See Figure 27 for average price fluctuations of various types of stocks.) While generalization is difficult, it would seem that a substantial part of the surplus of life insurance companies is needed to meet other possible investment risks. Even bonds that are regarded as high grade and first mortgages on real estate have shown losses in periods of depression. During the decade 1929–1938, a group of 26 companies representing the major part of the industry wrote off $624 million on bonds and stocks and $270 million on real estate, the latter representing property taken over on foreclosed mortgages. These losses were partly offset by gain from sales and redemptions of bonds and stocks of $140 million and gains from the sale of real estate at more than book value of $34 million.[8] In the ensuing years of prosperity undoubtedly further recoveries were made.

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[2] A beginning has been made in the field of commercial bank lending where an allowance for bad debt losses based on past experience may be deducted in determining taxable net income The deduction is based on experienced losses rather than the "premium for risk" as measured by an excess of yield over that on prime paper This basis is necessary because higher yield in short term lending or in mortgage lending may represent the amount needed to cover extra costs of administering such loans rather than risk of losses

That life insurance companies have as a group pursued a general policy of fixed value investments is seen from an examination of their assets. The accompanying table shows the asset proportions of all legal reserve life insurance companies in this country for the same years for which liability and surplus proportions were shown above.

ASSET PROPORTIONS OF ALL UNITED STATES LEGAL RESERVE LIFE INSURANCE COMPANIES AS OF DECEMBER 31

(*Per Cent*)

| | *1920* | *1930* | *1940* | *1945* | *1948* |
|---|---|---|---|---|---|
| Bonds | 49.0 | 33.6 | 55.1 | 72.8 | 68.4 |
| Stocks | .7 | 2.5 | 1.8 | 2.2 | 2.6 |
| Mortgages | 29.7 | 40.1 | 19.3 | 14.8 | 19.5 |
| Real estate owned | 2.3 | 2.9 | 6.7 | 1.9 | 1.9 |
| Policy loans | 11.7 | 14.9 | 10.1 | 4.4 | 3.5 |
| Cash | 1.7 | .8 | 3.4 | 1.8 | 1.6 |
| Deferred and unpaid premiums | 1.8 | 2.3 | 1.6 | 1.4 | 1.5 |
| All other assets | 3.1 | 2.9 | 2.0 | .7 | 1.0 |
| Total admitted assets | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Source: Compiled from *The Spectator Insurance Year Book, Life*.

The changing proportions of the two chief forms of investment—bonds and real estate mortgages—represent changes in demands of the investment market rather than any change in the policy of the insurance companies During the 1920's, corporate expansion and the housing boom provided an ample supply of investments but holdings of mortgages from the latter field increased at the more rapid rate It was during this decade that utility bonds began to rise in importance, although as late as 1930 railroad bonds constituted almost half of total bond holdings But during the 1930's, rail bonds holdings remained constant while utility holdings grew rapidly New financing was small but refinancing at decreasing yields shifted a large share of the utility debt from others, particularly individuals, to life insurance company portfolios[4] By 1940 rail holdings had fallen below 11 per cent of total assets and utility holdings risen to almost 15 per cent

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[8] *Operating Results and Investments of the Twenty-six Largest Legal Reserve Life Insurance Companies in the U. S., 1929–38.* Submitted by the Securities and Exchange Commission to the Temporary National Economic Committee (Washington, D.C.: General Printing Office, 1939). Even more important than surplus in caring for the losses cited, were gains from operations during this period. These companies had total gains during the decade of $3,570 million from mortality, $470 million from loading, and $751 million from surrenders and lapses. The first two items represent premiums in excess of amounts required for death losses and operating expenses, respectively, the latter represent charges made to offset adverse mortality on terminated policies and the special expenses of writing such business.

During the 1930's, the depression in business activity and consequent lack of demand for funds from normal sources forced the life insurance companies to place their growing funds in United States bonds that grew out of the deficit financing of the period Holdings of Governments were also increased by the addition of government-guaranteed bonds of the Home Owners' Loan Corporation and the Federal Farm Mortgage Corporation These two government agencies took over mortgage loans in default and gave the financial institutions their bonds for such amounts of the loan as were regarded to be sound The foreclosure of other mortgages, particularly on rental housing and commercial property, contributed substantially to the shrinkage of mortgage holdings and the expansion of the real estate held Every major depression witnesses something of this shift The foreclosed real estate should result in but moderate losses if the loans were soundly made After the initial adjustment and the rehabilitation of the property, subsequent rentals usually provide a reasonable return on the amount invested As business recovers, the property is sold

Except for this depression phenomenon, real estate holdings have been typically small in the past In ordinary times they consisted largely of office buildings for the conduct of their business The search for profitable investment has brought increased investment in real estate, which may mark the beginning of a new trend As a result of a continuous sale of foreclosed property acquired during the 1930's, real estate fell to a low of three fourths of a billion in 1946, which represented only 1.5 per cent of assets. Since then it has grown both absolutely and relatively. In the next three years the amount doubled and amounted to 2.1 per cent of assets. Some of this change represented a public-spirited effort to meet the postwar housing shortage by building rental housing. Few conservative insurance companies would have chosen to build at a time of such high construction costs. Much of the remainder was acquired by the purchase of buildings from business corporations with lease-backs that insured the insurance company against loss. This latter arrangement was for all practical purposes a fixed value investment.

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[4] Details of this distribution of investments may be traced for major companies representing the bulk of the business in the annual *Proceedings of the Association of Life Insurance Presidents* For more recent years data for all companies are reported annually in the *Proceedings of the Life Insurance Association of America* The broad picture of the place of life insurance company investment in the investment market may be studied in Guthmann, H G, "The Movement of Debt to Institutions and its Implications for the Interest Rate," *Journal of Finance*, March, 1950

During the first half of the 1940's, war conditions dominated the investment markets. Unable to undertake any important construction work, new borrowing was nominal and old debts in the form of corporate and municipal debt and real estate mortgages

CLASSES OF BONDS, STOCKS, AND MORTGAGES HELD BY ALL LIFE INSURANCE COMPANIES IN THE UNITED STATES

| | *(Billions of Dollars)* | | | *(Per Cent)* | | |
|---|---|---|---|---|---|---|
| | *1945* | *1948* | *1949** | *1945* | *1948* | *1949** |
| Bonds | | | | | | |
| United States gov't | 20.6 | 16.7 | 15.2 | 46.0 | 30.2 | 25.6 |
| State and municipal | .7 | .9 | 1.1 | 1.6 | 1.6 | 1.8 |
| Canadian gov't † | 1.2 | 1.4 | 1.4 | 2.6 | 2.6 | 2.4 |
| Total gov't | 22.5 | 19.1 | 17.7 | 50.2 | 34.4 | 29.8 |
| Public utility | 5.2 | 8.7 | 9.8 | 11.6 | 15.7 | 16.5 |
| Railroad | 3.0 | 3.0 | 3.0 | 6.7 | 5.4 | 5.1 |
| Other corporate | 1.9 | 7.1 | 8.8 | 4.3 | 12.9 | 14.9 |
| Total bonds | 32.6 | 38.0 | 39.3 | 72.8 | 68.4 | 66.3 |
| Stocks | | | | | | |
| Railroad | .1 | .1 | .1 | .2 | .2 | .2 |
| Public utility | .3 | .4 | .5 | .6 | .7 | .8 |
| Other | .6 | 1.0 | 1.0 | 1.4 | 1.7 | 1.7 |
| Total stocks | 1.0 | 1.4 | 1.6 | 2.2 | 2.6 | 2.7 |
| Mortgages | | | | | | |
| Farm | .8 | 1.0 | 1.2 | 1.7 | 1.8 | 1.9 |
| Other | 5.9 | 9.8 | 11.7 | 13.1 | 17.7 | 19.8 |
| Total mortgages | 6.6 | 10.8 | 12.9 | 14.8 | 19.5 | 21.7 |
| Other assets | 4.6 | 5.3 | 5.5 | 10.2 | 9.5 | 9.3 |
| Total admitted assets | 44.8 | 55.5 | 59.3 | 100.0 | 100.0 | 100.0 |

* Preliminary estimates.
† Other foreign gov't less than 0.1 per cent.
Source: *Proceedings of the Life Insurance Association of America 1949, 1947.*

were reduced by repayment out of retained earnings, savings, and depreciation funds The expanding federal debt became the all-important supply of new investment From a minor item in the 1930 portfolio, federal obligations rose to about $6 billion and a third of the bond portfolio in 1940 By the end of 1945 they had risen above $20 billion and approached two thirds of the bond portfolio

After 1945, corporations and home builders came back into the market for borrowed funds not only to care for ordinary requirements but to make up the deficiency in construction and replacement accumulated during World War II and the preceding depression A large increase in the number of family units and a spurt in population that far outran the estimates of statisticians brought a renewal of the growth factor in the country's economy Growing population and increased capital equipment to provide a rising standard of living are major factors in capital demand At the same time the funds flowing into life insurance coffers expanded hugely A larger number of families and a high national income were important contributing factors, but inflation had also made a larger sum of insurance necessary to provide income protection equivalent to that previously carried at the lower price level Since life insurance premiums continue to flow in for many years after a policy is written, these companies expect further asset expansion, even should the total volume of insurance level off These sums may well create a problem of investment [5]

In spite of the search for adequate return and the decline in bond yields, holdings of stocks have remained relatively low The greater part of the stocks purchased have been preferred rather than common Between 1940 and 1948 the percentage of all stocks held rose from 1 8 to 2 6 per cent In contrast, the same percentage fell from 2 5 to 1 8 per cent between 1930 and 1940 when depression clouds kept confidence in junior securities at a low point The customary requirement that even preferred stocks be carried at market value and the prohibition against common stocks in such an important jurisdiction as New York state has kept investments within conservative limits in this field The market value rule for preferred stocks is particularly hard to bear when the market decline is the result of a rise in the interest rate level rather than any deterioration in investment quality [6]

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[5] A further discussion of the broader tendencies in the investment market is given in Chapter 2

[6] This valuation problem continues to receive the attention of the industry and regulatory authorities Probably high grade preferred stocks would increase in popularity if some fixed valuation base were devised for them as for bonds and mortgages

The difficulties in the way of investing life insurance reserves in common stocks has been referred to earlier in this chapter as well as in Chapter 4.[7] The responsibility for dollar liabilities, the small margin of surplus liabilities to absorb losses, and the difficulties of arriving at any stable valuation base for a form of property with such inherently fluctuating income as characterizes common stocks (save perhaps in the case of certain types of public utilities), are tough obstacles to surmount. Even though a large number of states permit limited investment in common stocks, sound policy has restricted actual commitments to even less than the law permits in such states.

It is somewhat surprising that in the search for investment opportunities so little attention has been devoted to real estate rather than common stocks, if the field of ownership investment is to be invaded. New York State, a notably conservative jurisdiction in its laws governing life insurance investments and the legal home of many leading companies, permits real estate while prohibiting common stocks. The permission is currently restricted to 3 per cent of admitted assets.[8] In the absence of adequate statistical stud-

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If they could be carried at cost so long as they met some quality test, the vexatious problem could be met. A possible requirement designed to offset any weakening arising from such a rule would be to stipulate that life companies set up a valuation reserve or a reserve for losses equal to some fraction, say at least one half, of any excess of yield over that obtainable from the choicest bonds at the time of purchase. One of the inconsistencies of financial theory and practice is that, although both economic theorists and practical financiers speak of the yield in excess of that on prime bonds as a "premium for risk," no attempt is made to segregate this "premium" in the accounts to meet probable losses.

A discussion of the preferred stock valuation problem is given in *A Proposed Method for the Valuation of Preferred Stocks Held by Life Insurance Companies* by the Life Insurance Investment Research (joint) Committee of the American Life Convention and the Life Insurance Association of America (1945).

[7] The experience of the Sun Life Assurance Company of Canada with its common stocks investments may be traced by the reader in the annual *Reports of the Superintendent of Insurance of the Dominion of Canada*. The Company built up substantial holdings during the decade of the 1920's, at the end of which large profits from appreciation existed. Stocks owned, chiefly common, amounted to 56.8 per cent of assets in 1930. After the precipitous decline in stock prices in the early 1930's, these appreciation profits were succeeded by losses. A change in investment policy thereafter caused the proportion of stocks to decline until, at the end of 1940, common stocks totalled 22.8 per cent and preferred stocks 1.6 per cent of admitted assets, in 1949, the respective percentages were 4.8 and 2.3 per cent. *Best's Life Insurance Reports,* 1930, 1941, 1950. For a study of this policy under adverse conditions, see Guthmann, H. G., and Dauer, E. A., "Stocks vs. Bonds as Life Insurance Investments During Depression,' *Harvard Business Review,* January, 1935, Vol. XIII, p. 237.

[8] New York State Insurance Law, Section 81 (7), Subdivision (h), which covers the subject of real estate acquired for investment, was first enacted in 1947. Note that real estate may also be required for office space or as an incident to the foreclosure of defaulted mortgages.

ies little can be said with assurance about the stability of real estate income Much of popular opinion is based upon the unhappy record of heavily mortgaged, rather than of unencumbered, property such as a conservative life company would be expected to hold Probably well-selected real estate would show a somewhat less stable net income than the dividends of the more stable types of utility common stocks, but it would compare favorably with or improve upon the record of well-regarded industrial common stocks The limited marketability of real estate would not be important for life insurance companies, when held in moderate proportions It would even make it easier to ignore market price fluctuations away from the book valuation so long as income was adequate to cover all expenses, including depreciation, and provide the return required by the company to meet its compound interest liability on its reserve liability to policyholders Furthermore, unlike common stocks, the common practice is to depreciate real estate systematically The result is to introduce a factor that constantly tends to cure any book valuation temporarily in excess of market value The New York law expressly requires a minimum annual depreciation of not less than 2 per cent of the cost including the land value. Furthermore, any net income in excess of 4 per cent on the net book value must be used to reduce the book value still further Should the time come when the companies have an investment at book values substantially below current market values, they are likely to become more aggressive in expanding into further investment, up to whatever the law permits

Thus far, except for a few large housing projects, the companies have favored commercial, rather than multiple-family residential, property Perhaps this policy reflects the influence of the inflated building costs in the years following World War II and fears of the ultimate effects of housing projects subsidized by the government and of the risks seen in rent controls. In those years commercial, and even industrial, property could be purchased and leased to corporations of high credit standing for long terms Such long-term leases typically stipulated rentals sufficient to allow the write-off and recovery of all or a major part of the cost of property during the life of the lease, say a period of 25 or 30 years This arrangement, plus frequent provisions that required the tenant to bear the cost of such fluctuating operating costs as maintenance, insurance, and real estate taxes, minimized the risk and stabilized the return for the investing insurance company The corporate tenant under such a lease expects a low rent that will reflect the high credit standing that he brings to support such a long-term contract By its terms such property becomes economically a credit form of commitment in spite of the legal form that makes it an ownership investment When a lease promising a fixed return and the recovery of principal exists, there is no more need for raising the question of book valuation than for the serial obligations of railroad equipment trusts so long as the lessee is solvent

Even when a real estate investment is not protected by a long-term lease arrangement, it is possible to argue by analogy for ignoring any market price fluctuations so long as current income provides a fair return on book value The analogy is found in commercial bank practice where the question of current valuation is much more significant because of the bank's more volatile deposit liabilities Because of the ready availability of quotations for marketable bonds and the general requirement of liquidity, commercial banks have characteristically felt it a desirable practice to reduce bonds to market value whenever the latter is lower than book value Yet when term loans (that is, serial loans running typically not over five to ten years) are made over-the-counter to business, the very absence of any market quotations leads to ignoring the question of possibly changing market valuation so long as the loan is in good standing (just as is done in the case of the bank's more conventional short-term loans) The term loan is, of course, a fixed value investment, and ordinary real estate, unless under long-term lease, is not But neither are the requirements for liquidity for a life insurance company as great as for a commercial bank When real estate is being held by a life insurance company for a period long enough to recover its whole principal, market price fluctuations, which in any case are more difficult to ascertain than for common stocks, are much more easily ignored

The argument might be carried a step further in the case of real estate, which earns a return in excess of that paid on highest quality mortgages Any excess could be regarded and treated in the accounts as "premium for risk," as under the provisions of the New York law referred to previously, which require that any return over 4 per cent be used for amortization of book value When such extra return is substantial, the life insurance company may be able to write down its investment within a decade or less to a figure that is but little more or even less than it would lend upon a first mortgage If a property showed a net income before depreciation of 10 per cent on cost or an 8 per cent return after a 2 per cent depreciation allowance, the excess over 4 per cent, amounting to

6 per cent, would be available to write down cost In six years the property could be written down to less than two-thirds of original cost[9]

Since life companies are accustomed to mortgage investment, the risk of outright ownership of real estate should probably be thought of as being related to the margin of value over what would be a reasonable mortgage loan rather than related to total investment[10] The greater the rapidity with which the investor can recover his principal tied up in this more risky portion of his investment, the less the degree of risk Risk is related to the length of time required to recover the principal invested

To whatever extent life insurance companies invest in either real estate or common stocks, the problem of timing purchases arises Purchases should be minimized when prices are relatively high either for cyclical reasons or because of passing price inflation In contrast, the common policy has been to ignore the matter of timing in the field of fixed income investment and to invest whenever funds became available There is a need for immediate and regular income because of the liability of the company to accrue interest upon its reserve liability to policy-holders In the years immediately following World War II, major life insurance companies felt under some social pressure to build rental housing to help meet the housing shortage in the larger cities although construction costs appeared very high at the time They could only hope that other commitments could be made at more propitious times, which would produce a balanced experience that would result in a long-run return at a satisfactory level

Liquidity has been a distinctly minor problem for the life insurance company This subordinate role of liquidity explains the heavy investment in real estate mortgages whenever they are available It also makes reasonable the carrying of bonds at amortized values and the ignoring of their market prices save when they lose their investment quality The stability of the savings lodged with these companies, which makes a non-liquid policy possible, can be studied in their record during the trying depression years of the early 1930's Even though many policyholders were forced to surrender policies or to borrow on their cash surrender value, the bulk of such demands were characteristically met from current receipts from other policyholders For many companies the result was to slow down asset growth rather than to create any large need for recovering cash from existing assets Even where some recovery was needed, some back flow of cash arose from repayments on mortgages and bonds Heavy demands for cash by policyholders generally developed only where some factor had caused a loss of confidence in solvency The few failures that did occur in this period of acute depression were mostly companies that suffered exceptional investment losses Unlike the commercial banking field, no system of government-sponsored insurance, like that of the Federal Deposit Insurance Corporation, was needed to restore confidence Financial assistance by loans from the Reconstruction Finance Corporation to life insurance companies was minor

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[9] So far as is known, no similar practice of using the "premium for risk" for writing down investment is found in the field of common stock investment However, a discussion of the idea and its bearing upon risk is found in S H Nerlove, "Common Stocks as Investments for American Life Insurance Companies," *Journal of Finance*, October and December, 1948

[10] Parry suggests that one restriction upon the ownership of real estate might be a provision that " so far as statutory reserves are concerned, only 2/3 of the value of such real estate investment shall be sanctioned, with the remaining 1/3 to be included as part of the insurance company's surplus funds—the situation in Sweden " Corliss L Parry, "European Insurance Companies and Real Estate," *Journal of Land and Public Utility Economics*, XVI 294–305, 298 (August, 1940) The article is of interest in covering some aspects of European experience, which is greater in this field than that of American companies

Regulation of investments by the states has been characteristic for life insurance companies for many years The major life insurance companies are largely incorporated in about one-fourth of the states, and the laws and regulatory practices of these states, especially New York, Massachusetts, New Jersey, Connecticut and Wisconsin, are of particular importance Regulation is chiefly important for investment policy because it restricts (1) the kinds of investments permitted, (2) standards of valuation, and (3) requirements for diversification The general nature of actual practice is indicated by the tables given on pages 755, 757 which reflect the total or average picture The chief differences among individual companies appear as a greater-or less-than-average preference for mortgages as against bonds or for certain classes of bonds Some large companies show a vigorous effort to acquire privately placed corporate debt issues Smaller companies often favor mortgage investments in those states in which they chiefly sell insurance Some companies show more exacting standards of investment quality than others, although as a class they comprise one of the most conservative groups of lending institutions Valuation practice is important because it tests solvency A common plan is achieved through the National Association of Insurance Commissioners Reference has already been made to the practice of ignoring market fluctuations of bonds held and gradually amortizing any premium or discount over the life of the bond Bonds in default and stocks are ordinarily carried at the year-end at a market value determined as of December 1. However, some life companies have advocated averaging values over a period or recognizing only a portion of market fluctuations from book value in order to achieve a more stable valuation base.

A wealth of information on policy and practice may be had from the annual reports of the individual companies. Detailed lists of security holdings are ordinarily available. Other convenient sources of financial data are *Best's Life Insurance Reports, The Spectator Insurance Yearbook—Life, Moody's Manual of Investments Banks, Finance and Real Estate*, and *Standard Corporation Descriptions*. Intercompany comparisons to be fair must cover experience under unfavorable, as well as favorable, cyclical conditions. The influence of changes in policy and differences in operating character must also be allowed for in some instances.[11]

2. **Mutual savings banks.** In spite of the considerable difference between the contractual relationships of the life insurance company and its policyholders and the mutual savings bank and its depositors, the similarity of the investment requirements of the two institutions is very great. Although the depositor in a savings bank has a legal right to withdraw on relatively short notice, as from 60 to 90 days, the common practice is to permit withdrawal without notice in ordinary times. Savings deposits show markedly greater stability than the demand deposits of the commercial bank. As a result high grade fixed-value debt investments have proven satisfactory for savings banks even though long-term bonds fluctuate in market price from time to time and mortgages have been notably nonliquid, at least until the advent of F.H.A. insurance. The pronounced similarity between the practice of savings banks and life insurance companies may be seen by comparing the following figures for the former with those given above for the latter.

The assets show distinctly less emphasis upon liquidity than in the case of commercial banks, which will be examined shortly. Cash balances are kept at a relatively low level, and substantial commitments in real estate mortgages are characteristic when they are available. During the depressed 1930's, holdings of both mortgages and corporation bonds shrank while an increasing part of the growing savings these banks held were invested in governmental obligations, both federal and local. War finance and a huge increase in savings pushed the holdings of United States obligations to a very high level in the 1940's. A study of maturities would

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[11] For further discussion, see Chapter 15 and H. G. Guthmann, *Analysis of Financial Statements*, Chapter 17, "The Statements of Insurance Companies" (New York: Prentice-Hall, Inc., 3rd ed. 1942.)

ASSETS OF MUTUAL SAVINGS BANKS
(as of December 31)

| | *(Millions of Dollars)* 1930* | *(Millions of Dollars)* 1940 | *(Millions of Dollars)* 1948 | *(Per Cent)* 1930* | *(Per Cent)* 1940 | *(Per Cent)* 1948 |
|---|---|---|---|---|---|---|
| Securities | | | | | | |
| U.S. obligations | 153 | 3,113 | 11,476 | 1.5 | 26.0 | 56.1 |
| State and municipal | 474 | 633 | 71 | 4.6 | 5.3 | .3 |
| Railroad & pub. serv. bonds | 1,246 | 1,202 | | 12.1 | 10.1 | |
| Foreign bonds | 69 | 55 | | .7 | .5 | |
| Other bonds | 1,843 | 91 | 2,005 | 17.9 | .8 | 9.8 |
| Stocks, including Fed. Res. bank | 87 | 168 | 157 | .9 | 1.4 | .8 |
| Total securities | 3,872 | 5,262 | 13,709 | 37.6 | 44.0 | 67.0 |
| Real estate loans | 5,518 | 4,835 | 5,579 | 53.6 | 40.4 | 27.3 |
| Other loans | 378 | 91 | 107 | 3.7 | .8 | .5 |
| Cash and due from banks | 297 | 979 | 878 | 2.8 | 8.2 | 4.3 |
| Other assets | 230 | 785 | 201 | 2.3 | 6.6 | .9 |
| Totals | 10,295 | 11,952 | 20,474 | 100.0 | 100.0 | 100.0 |

* As of June 30
Source: Compiled from *Reports of the Comptroller of the Currency*

reveal that these were chiefly long-term bonds rather than the short maturities characteristic of commercial bank portfolios. After the end of World War II in 1945, increasing business activity and construction permitted an expansion of investments in real estate loans and corporation bonds.

Just as savings banks show investment policies similar to those of life insurance companies in the type of holdings and liquidity, further study shows that they are often subject to similar legal restrictions by state regulatory authorities. "Legal for savings bank" has become a synonym for conservative investment quality. In some states, such as New York, actual lists of bonds are published that qualify under the legal rules set forth in the law.[12] Savings banks rules may, however, be found to be somewhat more restrictive than those for life insurance companies in a few matters. Even preferred stocks may be forbidden for the former, though permitted for the latter.[13] Mortgage investments for the savings bank may be restricted to the state in which it is located or neighboring states, with exceptions for mortgages insured by the Federal Housing Administration

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[12] Legal restrictions and legal lists for the various states may be studied conveniently in *Moody's Manual of Investments Governments and Municipals*. The failure of legal lists to include suitable investments and to exclude items that have deteriorated in standing, as a result of legislative inertia, is discussed in *A Report by the Trust Investment Study Committee* by the Trust Division of the New York State Bankers Association (1949), p. 50 *et seq.*

[13] In the search for increased yield, some have urged limited investment in common stocks for savings banks, possibly up to the amount of their surplus. This influence is seen in permission to savings banks in New Hampshire to buy certain investment company shares (1949), and in Massachusetts to buy certain bank stocks (1950).

An examination of the liabilities and surplus of the mutual savings banks in the accompanying table indicates the chief responsibility is to savings depositors, who are often restricted to a maximum amount beyond which interest will not be paid The surplus and undivided profits that constitute the margin of safety for absorbing losses of these mutual institutions have been in the neighborhood of ten per cent of total assets, or somewhat higher than in the case of the life insurance companies

LIABILITIES AND SURPLUS OF MUTUAL SAVINGS BANKS
(as of December 31)

| | *(Millions of Dollars)* | | | *(Per Cent)* | | |
|---|---|---|---|---|---|---|
| | *1930* | *1940* | *1948* | *1930* | *1940* | *1948* |
| Time deposits | 9,205 | 10,628 | 18,388 | 89 4 | 88 9 | 89 8 |
| Other deposits | 11 | 3 | 17 | 1 | — | 1 |
| Other liabilities | 10 | 33 | 75 | 1 | 3 | 3 |
| Surplus | 899 | 868 | 1,362 | 8 7 | 7 3 | 6 7 |
| Undivided profits | 155 | 309 | 566 | 1 5 | 2 6 | 2 8 |
| Surplus reserves | 15 | 111 | 66 | 1 | 9 | 3 |
| Totals | 10,295 | 11,952 | 20,474 | 100 0 | 100 0 | 100 0 |

**3. Savings and loan associations.** Because of certain broad similarities of function in their service to the thrifty saver, the savings and loan associations, sometimes called building and loan associations, should be studied at the same time as the savings bank Unlike the mutual savings banks, which are confined to some 17 states, the savings and loan associations are found throughout the country Like commercial banks, they may be chartered under either state or federal laws Originally, the investment of every member was evidenced by shares that had to be purchased on a monthly instalment basis All receipts were invested in mortgages on homes With no privilege of withdrawal, the saver was bound to his investment until his monthly savings, plus credits for earnings, brought the value of his shares up to par and maturity No liquidity existed or was needed for such an association With an increasing number of associations providing for a withdrawal privilege, especially during the 1920's, these institutions came to take on more of the attributes of a savings bank They differed in the systematic savings plan of their instalment share purchase plan. However, shares that could be bought for a single lump sum increased in popularity When the federal law was written after the

Bank Moratorium, it specifically authorized shares upon which optional, that is, irregular, payments might be made

In spite of the increased liberality of the withdrawal provision, the chief and almost only investment has been first mortgages on homes repaid on a monthly instalment plan An exception is made for the obligations of the United States Government During World War II, when home construction almost came to a halt, Governments grew to fill an important place in the balance sheet Even after the resumption of normal lending many associations continued to carry some of these bonds as an element of liquidity, adding a note of financial prestige to the annual report

With such a relatively nonliquid investment policy, these institutions depend primarily upon the relative stability of the overall volume of share liabilities, or "deposits," to make it possible to care for withdrawals[14] When commercial banks were closing their doors in the early 1930's, withdrawal requests placed a heavy strain upon associations in the communities affected[15] Many associations were forced to suspend the privilege The precipitate drop in the price level generally, and in real estate prices in particular, added to the woes of a group that had traditionally made somewhat larger loans on real estate Where other financial institutions were often limited to loans of one half to two thirds of appraised value, the savings and loan association had not infrequently employed a three-fourths limitation

The founding of a federally-chartered system of associations that followed was designed to restore public confidence in this institution A system of share insurance, under which a Federal Savings and Loan Insurance Corporation insured accounts up to $5,000 (since increased to $10,000), was planned to parallel the similar work of the Federal Deposit Insurance Corporation for banks All federally-chartered associations were required to carry this insurance, and most state-chartered associations found it desirable to adopt the plan

Should severe dislocations again affect the mortgage lending field, these institutions should be in a much better position than formerly to face difficulties An element of liquidity has been added by holdings of Governments and by the increased marketability of mortgages protected by F H A insurance Many associations are members of Federal Home Loan banks, which serve as "reserve" banks, making secured loans to members on mortgages Public confidence, which is so essential to the avoidance of panicky runs is cared for by such factors as (1) the Federal Savings and Loan insurance mentioned above, (2) substantial holdings of mortgages covered by F H A insurance, and (3) the creation of surplus through retained earnings to absorb possible losses The strengthening of the commercial banking system by more conservative lending and investment practices since 1935 and by deposit insurance reduce the likelihood of money panics and bank runs that might create, in turn, heavy withdrawal demands upon these associations

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[14] Although the members are owners, or shareholders, their accounts are kept as a definite dollar amount, much like those of depositors The total deposited amounts plus dividend credits, usually made at semiannual intervals, are treated as the member's credit balance subject to withdrawal Any surplus is held as a general reserve against losses and is not subject to withdrawal

[15] Savings banks were located largely in the northeastern states, where runs and bank closings were less prevalent Of the 598 active savings banks in 1929, only 15 suspended during the difficult five years 1930–34 *Annual Report of the Federal Deposit Insurance Corporation*, 1934, pp 112–113

**4. Fire and casualty insurance companies.** Because the fire and casualty insurance companies show some notable difference in their investment policies from any of the other financial institutions, their character should be considered here even at the risk of some repetition of points covered in Chapter 15 The key to their policy is found in the nature of their liabilities as reflected in their balance sheets An illustrative percentage analysis of the balance sheets of stock and mutual fire and casualty companies indicates a common over-all policy with differences that reinforce our conclusions as to motivating forces

In the accompanying table, the liabilities are seen to be chiefly the estimated unpaid losses in the process of settlement and the unearned premiums from policyholders The "surplus to policyholders" to protect these liabilities constitutes a most substantial cushion to absorb losses, a considerably larger equity than was seen in the figures for the other types of financial institutions studied thus far The tradition for such a protective surplus grew up in the older fire and marine fields to meet the extraordinary losses of unusual years Even wars have produced no fluctuations in the loss experience of American life insurance companies comparable to the great conflagrations that have swept such cities as Chicago, Baltimore, and San Francisco, or the cyclical variations in losses common to both fire and casualty insurance, although the influenza epidemic during World War I did cause unusual mortality With a nationwide diversification of risks and the reinsurance of portions of any concentrated risk, most American companies are well fortified to meet the year of unusual loss Nevertheless both fire and casualty insurance companies continue to regard a substantial protective surplus as essential to the safety of policyholders

BALANCE SHEET PROPORTIONS OF FIRE AND
CASUALTY INSURANCE COMPANIES 1948

| | *(Per Cent)* | | | |
|---|---|---|---|---|
| | *Fire & Marine* | | *Casualty* | |
| | *Stock* | *Mutual* | *Stock* | *Mutual* |
| *Liabilities and surplus* | | | | |
| Unpaid losses | 10.7 | 10.0 | 34.6 | 43.7 |
| Unearned premiums | 41.8 | 43.9 | 27.1 | 21.9 |
| Other liabilities | 5.8 | 5.0 | 7.0 | 9.9 |
| Total liabilities | 58.3 | 58.9 | 68.7 | 75.5 |
| Voluntary and contingency reserves | 2.0 | 4.0 | 4.5 | 4.9 |
| Capital or guaranty funds | 9.3 | 1.1 | 6.5 | 1.2 |
| Net surplus | 30.4 | 36.0 | 20.3 | 18.4 |
| Total policyholders' surplus | 41.7 | 41.1 | 31.3 | 24.5 |
| Liabilities and surplus | 100.0 | 100.0 | 100.0 | 100.0 |
| *Assets* | | | | |
| Cash | 9.6 | 11.3 | 11.1 | 9.6 |
| Bonds | | | | |
| United States | 38.0 | 48.4 | 48.1 | 57.2 |
| Other | 9.2 | 16.9 | 10.4 | 16.5 |
| Stocks | 34.4 | 13.6 | 18.3 | 5.8 |
| Mortgage loans | .4 | 1.7 | .6 | 2.2 |
| Agents' balances | 5.3 | 4.7 | 9.0 | 5.3 |
| Other assets | 3.1 | 3.4 | 2.5 | 3.4 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 |
| Total assets (millions of dollars) | 4,811 | 706 | 3,711 | 1,013 |

Source *Spectator Insurance Year Book*, 1949

This substantial cushion of surplus has made possible investment in assets of more fluctuating value than would otherwise be permissable. On the other hand, the tradition of being ready to meet the unexpected catastrophe has made ready marketability more important than stable values. The consequence has been a demand for marketable bonds and stocks and a fairly general avoidance of real estate and real estate mortgages. Within this marketable portfolio will ordinarily be found a proportion of fixed-dollar securities, which together with cash, will be sufficient to cover all the fixed-dollar liabilities and provide some margin sufficient for the maintenance of prestige under adverse business conditions. In this field the test of market value is regarded as imperative in testing solvency. Some companies, particularly those with a lesser surplus to policyholders, may avoid common stocks entirely to assure their meeting the foregoing standard. The over-all tendencies may be seen in the accompanying figures. Variations in practice may be studied in the reports of the individual companies.

In short, the differences in investment policies between the fire and casualty companies on the one hand, and the life companies and savings banks on the other, are best explained by the unusual loss hazard of the former and the differences in the relative size of the surplus cushion A further influence is the comparatively brief term of the typical insurance policy—usually from one to three years—which makes short-term investment of the funds derived from unearned premiums and loss claims seem desirable Actually, the total of such liabilities may be relatively stable from year to year As for regulation, management is given a relatively free hand, but is obliged to meet strict tests of solvency based on market value Competition for insurance business also exerts its pressure upon the company to maintain a conventionally suitable portfolio that will meet the general approval of the financial community when published in the annual report

**5. Commercial banks.** The commercial bank of theoretical economic discussion is an institution devoted on the one hand to deposit banking, that is, the handling of checking accounts, and on the other to the suitable investment of the resulting funds in liquid short-term commitments, ideally self-liquidating loans to commerce, industry, and agriculture Such "pure commercial banking" operations were envisaged by the founders of the Federal Reserve system The 12 Federal Reserve banks were designed to serve as a central bank, or a bank for bankers Here commercial banks would deposit their reserves, and, in case of need, be able to borrow on the basis of their own loans made to customers But even before this time, commercial banks had been developing into "department stores of finance," and the trend toward variety of function became especially pronounced during the decade of the 1920's [16] Tacit acceptance of this development as it applied to commercial bank lending and investing operations appeared in the Banking Act of 1935, which permitted the Federal Reserve banks to lend to commercial banks on a broad base that included almost any sound earning assets Other aspects of this department store evolution, such as trust department activities, safety deposit, foreign exchange transactions, and investment banking and trading activities in governmental securities, will not concern us here because this discussion has to do only with the investment policy of the banks

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[16] Jacoby, Neil H, and Saulnier, R J, trace this evolution in their *Business Finance and Banking* (New York National Bureau of Economic Research, Inc, 1944) Storer, Robert W, in "'Bank Portfolio Management," *The Analysts Journal,* First quarter, 1950, pp 23–26, points out that the ratio of Loans to Deposits for national banks fell from over 100 per cent in 1870 to a low of 16 per cent at the end of 1945 In interpreting this ratio, allowance should be made not only for changed borrowing habits, but also for a substantial decline in the ratio of net worth to deposits, the rise of time deposits, and the increase in primary reserves

We do need to recognize the growth of savings deposits and an acceptance of investment in bonds and real estate mortgages The conventional short-term loans to business and agriculture are so distinctly the specialized concern of commercial banks that textbooks on investments do not include them in their subject matter Such lending involves a very different type of approach and analysis than ordinary investment and involves such an intimate relationship between borrower and lender that their study is distinctive and unique[17] Even the commercial banker uses the term "Investments" to refer to securities and distinguishes his ordinary loans as "Loans and Discounts" However, it is also his common practice to include real estate mortgages under the latter heading, even though such loans, when they run for more than a year, are logically thought of as in the investments category Similarly, when the bank makes a "term loan" to a customer, often for a period of three to five years and sometimes longer, his advance requires an analysis more like that for an investment credit than for a seasonal commercial banking credit More attention has to be paid to the earning power of the borrower as a source of funds to repay the serial instalments of the term loan Nevertheless, term loans are ordinarily grouped with the Loans and Discounts in published balance sheets, although for purposes of management they fall into a group very different from conventional short-term paper

Investment in securities and in real estate loans may be said to fill two broad needs of the bank attempting to utilize profitably the funds at its disposal The first need is to employ those funds that the bank feels should be kept liquid and readily available This objective is referred to as the secondary reserve function The second need is the fairly permanent investment of funds that are chiefly derived from the stockholders' investment and the more permanent backlog of deposits Some bankers call these holdings "investment account" commitments, and they do not include all the Investments as that item appears in the balance sheet, since much of it is kept in liquid form for secondary reserve

**Banking reserves· primary and secondary** In earlier chapters (as in Chapter 7) we have had occasion to note that the term "reserve" is commonly employed in present-day accounting to include liability and surplus items and deductions from assets None of these usages fits into our everyday thinking, and financial statements would undoubtedly be much less confusing to the general public if the term "reserve" were banished from the accounting lexicon In the field of banking, however, reserve, while used in the balance sheet as it is in other fields, also takes on a meaning akin to popular understanding, namely as funds available to meet emergency demands for cash A bank's "primary reserves" consist of cash on hand and deposits with other banks, which can be used to meet the demands of depositors withdrawing funds Often the law is specific as to the form and amount in which the cash primary reserve shall be kept Member banks in the Federal Reserve system, for example, must keep a stipulated minimum per cent of their own deposits on deposit with the Federal Reserve bank The per cent required varies with the type of deposit, the location of the bank, and the changing credit policy of the Federal Reserve Any excess over the stipulated minimum and the amounts that the bank sees fit to keep as cash on hand in its own vaults is voluntary.

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[17] The reader interested in this field for the employment of bank funds is referred to Prochnow, H V, and Foulke, R A, *Practical Bank Credit*, (New York Prentice Hall, Inc, 2nd ed, 1950)

The term "secondary reserve" is applied to any loans or investments that the bank can convert into cash within 24 hours Under Loans and Discounts may be found such items as bank acceptances, stock market call loans, and prime open-market commercial paper Some disagreement exists whether over-the-counter loans made to the bank's own customers should be included even when they are eligible for rediscount at the Federal Reserve bank In spite of the availability of cash from such rediscounting, exclusion is usually made on the grounds that the bank is still liable for the collection of such loans and may even be under some responsibility for extending the loan at maturity in times of adversity[18] Such a standard for classification as secondary reserve requires not only ready convertibility into cash but also an absence of further responsibility for the loan on the part of the bank

In order to qualify as secondary reserve securities should be both readily marketable and have a characteristically steady price Large metropolitan banks holding deposits from other banks have concentrated upon holdings of federal government obligations of one year or less for this purpose In general, prime obligations with a maturity of five years or less are regarded as suitable with the heavier proportion in the shorter maturities Because the credit risk is negligible for such issues, the sole hazard of price fluctuation arises from possible fluctuations in money rates The shorter the maturity, the less the price fluctuation hazard from this factor, even though short-term rates fluctuate somewhat more than long-term rates As Wilkinson has put it "Quality and maturity are the Siamese twins of the secondary reserve account "[19]

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[18] Wilkinson, J H, Jr, *Investment Policies for Commercial Banks* (New York Harper & Brothers, 1938), p 24

But describing secondary reserve in these terms may be somewhat misleading It implies that it is held only for *emergencies* It would be more appropriate to think of such investment as *normal* for potentially fluctuating deposits Such reserve also serves to employ funds seasonally or longer when commercial loans are lacking, but they need to be provided for when and if they are sought by good depositor customers How far such liquid investment should be carried and where the semi-permanent type of commitment indicated as suitable for the mutual savings bank should begin must depend upon an analysis, then, of potential fluctuations in deposits and in customer-lending opportunities Some bankers make no attempt to distinguish between secondary reserve as a kind of financial defense line and what might be called "idle funds" investment They may believe that substantially all their funds derived from demand deposits and any fluctuating time deposits that are not of the savings variety should be kept as primary reserve, secondary reserve, or employed in conventional short term lending Since the unhappy bond market experiences of the depression in the early 1930's, they have been impressed with the hazard of long maturities even for bonds that rank as of "predominantly investment quality "

The most definite need for secondary reserve is found in the seasonal and cyclical fluctuations in deposits and customer borrowing [20] Liquid assets are especially necessary in the American banking system because of the rigid reserve requirements prescribed by regulatory authorities When a dollar of deposits is withdrawn, only the primary reserve against that dollar is immediately available Any deficiency in the legally required reserve caused by the use of more of the primary reserve must be restored within a very short time

Since the reserve requirement is changed from time to time for credit control purposes in the Federal Reserve system, it may, of course, be reduced at a time of economic stress On the other hand, when inflation threatens, the same authority can increase requirements At such a time, holdings of marketable Governments may be sold or allowed to "run off" at maturity without reinvestment to reduce the need for sudden and possibly harsh liquidation of customer loans Some complain that this action by the bank lessens the power of the central (Federal Reserve) banks to check inflationary lending, but credit pressure, if it is not to shock the economic system too greatly, should be absorbed by the money market as a whole and not strike too severely at the isolated bank and its customers without regard for economic need and credit standing The widespread distribution of short-term Governments throughout our commercial banking system in recent years has given it an element of fluidity that it formerly lacked The local bank is given a pipeline into the central money market It was the absence of such a connection in times of stress that led to the founding of the Federal Reserve system Large holdings of Governments have revolutionized our system of independent unit banks by giving them something of the fluidity and shiftable resources that were regarded as the unique characteristics of the nationwide branch banking systems so typical of most other industrially developed countries

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[19] *Ibid*, p 17

[20] For a fuller list and discussion of the factors that should determine the size of the secondary reserve, see Atkins, Paul M, *Bank Bond Investment and Secondary Reserve Management* (Boston Bankers Publishing Co, 1940), p 26

**Investing secondary reserves.** A limited supply of suitable investments for secondary reserve is found in the shorter maturities of the serial obligations found chiefly in municipal finance and railroad equipment financing Corporation bonds of good quality also qualify when nearing maturity or when held stable in market price near the call figure by a coupon that is more than the credit standing of the debtor would warrant if refinancing were contemplated Banks that do purchase such issues as these value their market stability, but ordinarily plan to hold them to maturity and place their primary reliance for cash upon holdings of short-term Governments To the younger generation of bankers accustomed to the large place of Governments in bank portfolios it is difficult to realize how different the problem was before such obligations were available in any important volume They were unavailable until World War I In the decade of the 1920's their utility was moderately appreciated but they occupied a distinctly minor place among bank investments Only with the prolonged deficit financing of the 1930's and the blow to business confidence resulting from wholesale bank failures at that time did they begin their rise to their present prominent position

The big increase in holdings of Government obligations took place during World War II The banks were able to absorb large amounts initially because of an accumulation of excess primary reserves with the Federal Reserve banks during the period of slack borrowing of the preceding decade Rates of interest on shortest-term Governments had declined to less than one eighth of one per cent per annum, not enough to make full investment worthwhile for many small banks As the Government's borrowing demands mounted during the war years, the Treasury strove to place as much as possible of its new issues with individuals and thrift institutions rather than commercial banks so as to minimize the inflationary expansion of bank deposits In spite of these efforts, demand deposits did expand greatly The continued purchases of Governments with a resultant increase in bank credit was made possible after excess reserves disappeared by purchases of Government obligations by the Federal Reserve banks These purchases created deposits on their own books that became additional primary reserves for commercial banks and so the basis for further purchases of Governments by the latter An idea of the tremendous rôle of such obligations in the commercial banking structure may be had when we note that in 1945 they constituted $91 billion out of total assets of $161 billion, or 56 6 per cent of the total In contrast, Loans and Discounts amounted to only $26 billion, or 16 2 per cent of total assets (Cash amounted to 21 7 per cent and all other assets 5 5 per cent )

**Influence of liabilities upon investment policy.** Before turning from the problems of secondary reserve to the "investment account" of the bank, some further attention should be given to the influence of the character of the bank's liabilities upon its investment policy In concentrating upon the traditional demand deposits of the commercial bank, sometimes too little attention is given to the funds derived from time depositors and stockholders The importance of these two items, particularly the former, may be studied in the accompanying figures of condensed balance sheets for national banks in 1930, 1940, and 1949

As in the case of other financial institutions, the net worth, or stockholders' investment, not only provides a buffer to absorb losses too large to be borne by current earnings but also is a source of funds that may be invested in assets that are less liquid or that may fluctuate in value, such as bank premises or securities subject to price fluctuation Care must be exercised that the total risk exposure from potential losses either from asset shrinkage or even from mere price fluctuation of bonds, shall not exceed the coverage provided by this risk cushion Since a bank may be required to restore any "impairment of capital," total risk should actually be limited to the surplus in excess of capital stock (Capital is said to be impaired when the excess of assets over liabilities is less than the

COMBINED BALANCE SHEETS OF NATIONAL BANKS
(as of June 30)

| | *(Millions of Dollars)* | | | *(Per Cent)* | | |
|---|---|---|---|---|---|---|
| | *1930* | *1940* | *1949* | *1930* | *1940* | *1949* |
| *Liabilities and Net Worth* | | | | | | |
| Demand deposits | 14,516 | 24,719 | 58,367 | 49.9 | 67.0 | 68.6 |
| Time deposits | 8,753 | 8,355 | 20,084 | 30.1 | 22.7 | 23.6 |
| Other liabilities | 1,872 | 334 | 821 | 6.4 | .9 | 1.0 |
| Total liabilities | 25,141 | 33,409 | 79,272 | 86.3 | 90.6 | 93.2 |
| Capital stock | 1,744 | 1,535 | 1,908 | 6.0 | 4.2 | 2.2 |
| Surplus | 1,591 | 1,250 | 2,507 | 5.5 | 3.4 | 2.9 |
| Undivided profits | 546 | 468 | 1,084 | 1.9 | 1.3 | 1.3 |
| Reserve for stock retirement | 95 | 224 | 329 | .3 | .6 | .4 |
| Total net worth | 3,976 | 3,476 | 5,828 | 13.7 | 9.4 | 6.8 |
| Total | 29,117 | 36,885 | 85,099 | 100.0 | 100.0 | 100.0 |
| *Assets* | | | | | | |
| Cash and due from banks | 5,415 | 13,877 | 20,376 | 18.6 | 37.6 | 23.9 |
| United States obligations | 2,754 | 9,111 | 35,597 | 9.5 | 24.7 | 41.8 |
| Other bonds | 3,922 | 3,577 | 5,370 | 13.5 | 9.7 | 6.3 |
| Loans and discounts | 14,897 | 9,179 | 22,578 | 51.2 | 24.9 | 26.5 |
| Other assets | 2,128 | 1,141 | 1,178 | 7.3 | 3.1 | 1.4 |
| Total assets | 29,117 | 36,885 | 85,099 | 100.0 | 100.0 | 100.0 |

Source *Annual Reports of the Comptroller of the Currency*

par value of the capital stock.) This standard would limit the definition of "cushion" to surplus, undivided profits, and any surplus or contingency reserves. Sometimes a bank may have undervalued assets that serve this same function. Valuation reserves are quite commonly subtracted from the related asset and do not ordinarily appear in the published balance sheet.

Much emphasis has been placed upon the ratio of net worth to deposits as a measure of ability to absorb losses. This ratio misdirects attention from the more significant relation of net worth to those assets in which the risk of loss resides. With the huge increase in the proportion of assets in the form of cash reserves and short-term United States obligations since 1933, the need for a risk cushion has correspondingly decreased. An improvement over the deposits-to-net-worth ratio is the ratio of the "risk assets," that is, the assets other than Governments and cash, to net worth.[21] Admittedly this measure also has defects. It ignores the differences in risk potential among these other assets Risk might lie in either the possibility of loss because of inability to collect certain loans or investments in full, or in the chance of price declines in investment holdings resulting from a rise in money rates rather than any deterioration in credit standing

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[21] Recognition by the Comptroller of Currency of the need for relating bank capital to risk assets rather than to deposit liabilities is noted and discussed by Robinson, Roland I., "A New Supervisory View of Bank Capital," *Journal of Finance* (March, 1950), Vol V, pp 95–109.

Even though it were granted that certain high-grade bonds and real estate mortgages were of investment quality and reasonably likely to be paid in full, the question is raised by some of their suitability even for a bank with time deposits They point to the rapidity with which commercial bank time deposits shrank along with demand deposits during the panic-ridden period of the early 1930's Undoubtedly both kinds of deposits can be withdrawn quickly when public confidence is shaken Differences in confidence are apparent in the contrast between the experience of the commercial banks of that period and the very dissimilar one of the mutual savings banks, the latter had much greater deposit stability than did the former Since then the commercial banks have increased their liquidity, improved asset quality, and adopted deposit insurance These measures argue against a future repetition of their previous experience The individual bank should, however, develop an investment policy based upon its own experience and that of banks in its own locality rather than broad averages of a countrywide condition Stability of its deposits will vary with the relative size of their accounts and the economic character of the community as well as with the formal classification of demand or time deposit

Just as some part of the time deposits may be less stable than has been suggested they were for savings banks, so some part of the demand deposits may be sufficiently stable to warrant some investment in less liquid forms, such as term loans or bonds of intermediate maturity Whatever the policy of individual banks, there is some evidence that major banks have tended to restrict their "investment account," including Government and other bonds of more than short maturity and real estate loans, to a figure not greater than their time deposits and net worth Such a policy means that cash reserves, Loans and Discounts, and short-term Governments have been sufficient to cover demand deposits

The emphasis upon short maturities by commercial banks may be seen in the Treasury's figures on maturity distribution of holdings of Governments in the table on the next page

Were it possible to analyze similar bank holdings of municipal bonds, it is probable that they would be found to be predominantly of short and intermediate maturity Since the early 1930's, low

MATURITY DISTRIBUTION OF GOVERNMENTS
HELD BY COMMERCIAL BANKS
(as of December 31)

| | *(Billions of Dollars)* | |
|---|---|---|
| | *1949* | *1947* |
| Maturing within one year | | |
| Treasury bills | 3.5 | 2.1 |
| Treasury certificates | 11.5 | 6.5 |
| Treasury notes and bonds | 9.0 | 8.2 |
| Total | 24.0 | 16.8 |
| Maturing or callable 1-5 years | 24.9 | 33.4 |
| Maturing or callable 5-10 years | 7.0 | 6.1 |
| Maturing or callable after 10 years | 3.9 | 5.0 |
| Total | 59.8 | 61.3 |

yields in the short-term money market have made the commercial banks the most vigorous bidders for short-dated municipals. Because the banks are subject to corporation income taxes, they have been willing to accept short-term municipal yields less than that from other prime obligations by approximately the amount of the federal corporation tax rate. The larger and increasing importance of this type of security for the banks may be judged from the fact that all insured (FDIC) commercial banks owned $3.7 billion of state and municipal obligations as compared with $3.3 billion of all other securities exclusive of United States obligations at the end of 1941, the similar figures were $6.4 billion of municipals and $3.6 billion of other securities at the end of 1949.[22] Most of the accumulation of municipals shown in the earlier year represented growth of the preceding decade.

**Government regulation.** An important factor in policy is regulation. Banks are responsive to the influence of the law, the regulations of supervisory authorities, and the bank examiner. They are subject to either federal or state supervision, depending upon whether they are national- or state-chartered institutions. Membership in the Federal Reserve system or deposit insurance with the Federal Deposit Insurance Corporation entails additional supervision, although efforts at cooperation have been directed toward the reduction of burdensome duplicating examinations.

National banks are governed by the federal law and the regulations of the Comptroller of the Currency. Although the investments of funds from demand and time deposits are not kept separate, some recognition of their different character is found. Real estate loans, for example, are limited to the greater of 60 per cent of the bank's time deposits or the sum of the bank's capital stock and surplus. Certain Treasury bonds not ordinarily eligible for bank purchase may be purchased for the investment of time deposits.

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[22] *Federal Reserve Bulletin,* July, 1950, p. 854.

Since 1938, member banks in the Federal Reserve system have been permitted to value bonds of investment quality on their books at cost even when the market price is lower (except that bonds purchased for more than par value must have the premium written off systematically over the life of the bond, unless the bank has seen fit to charge off the whole premium at the time of purchase). Bonds that fall into the four highest rating groups (thus *Aaa, Aa, A, Baa*) are regarded as of predominantly investment quality for the purposes of this rule. Other bonds or securities must be valued at the lower of cost or market value. Such a rule makes no distinction between purchases for secondary reserve and for what we have called "investment account." Since purchases for the first category are intended to be available for conversion into cash in case of need, the rule of the lower of cost or market would be sounder for such holdings. Probably most bankers brought up in the tradition of commercial banking believe it is desirable that this rule of conservatism be applied to all their bond holdings. The result may be an excessive concern over even minor bond market movements even though it is intended that some of their holdings should be for investment account. If the commercial bank is to continue to accept savings deposits and compete with other thrift institutions it is bound to have an interest in longer term bonds and mortgages. For managerial purposes it would, then, appear reasonable to distinguish between investment for such deposits and for secondary reserve in the valuation of investments, ignoring market fluctuations for the former after the manner of such institutions as the savings bank and the life insurance company and using the lower-of-cost-or-market rule for the latter. If a bank chooses to make no distinction among its investments, then the more conservative rule of valuation would appear the wiser course and the hazard of price decline in all holdings should be included in measuring the total risk exposure that should be kept within the limits of its capital risk cushion.

Clearly the four dominating considerations in commercial bank investment policy are quality, maturity, marketability, and diversification. These requirements stem from the need to keep liquid the funds derived from bank depositors and the limited net worth available for the absorption of loss Investment policy should be geared to fit the character of the deposits of the particular bank, the amount of its surplus cushion, and should be made to complement the loans and discounts that grow out of customer needs and community responsibilities [28]

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[28] For other discussion see Chapter 15 For comparative data on earnings from Investments and from Loans and Discounts, see the *Annual Reports of the Comptroller of the Currency,* Board of Governors of the Federal Reserve System, ***Banking and Monetary Statistics, Federal Reserve Bulletin***

# 27

# Investment Policy: Trust Funds

The close association in the popular mind of trust funds and financial institutions offers one possible reason for discussing them in succession Trustees are often spoken of as "fiduciaries" and thrift institutions as acting in a "fiduciary" capacity for the savers who use their facilities However, an examination of the problems for the two groups shows marked differences that should be reflected in policy and practice Both are expected to exercise a high degree of caution and prudence in making investments, and both are subject to certain legal rules or even supervision But where the institutions have to maintain values that will cover their fixed dollar liabilities and preserve their solvency, trust funds are typically administered for the benefit of individuals and educational and philanthropic institutions that have a cost-of-living problem[1] Fairly stable purchasing power is a more desirable objective for these trust funds than dollar stability Occasional exceptions may occur, as where a fund for pensions has been set up that has a problem of meeting stipulated dollar liabilities much like those of a life insurance company Situations may also exist in which it is necessary or preferable to bear the risk of a loss of purchasing power rather than bear the business risks found in those forms of ownership investment that give some protection against inflation

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[1] The differences between the two are discussed in *A Report by the Trust Investment Study Committee*, by the Trust Division of the New York State Bankers Association (New York The Association, 1949), p 70 *et seq* This reference is especially valuable not only in pointing out the developments that have led to the increasing investment of trust funds in common stocks but also for information on the comparative investment performance of various kinds of bonds and stocks

### Trust Funds for Individuals

When a person turns over the management of a fund of investments to a trustee, he is delegating the job in order to obtain the more expert care of specialists A testamentary trust is one created under the terms of a will so that the testator's wife, children, or other beneficiaries may enjoy it with greater certainty than if it were left directly to those heirs and their less skilful handling The more substantial the fund, the more likely there is to be felt a need for such management, although the very fact that an estate is smaller may mean that it should be handled with so much more care to insure the measure of financial security planned When the creator (or settlor) of a trust sets up the fund during his own lifetime, it is called a living trust In either type, provision may be made for a succession of beneficiaries within limits permitted by the state law Perpetual trusts are forbidden, under what are known as laws of mortmain, and successive benefits are limited to a certain number of generations, after which the trust must be dissolved[2] One might, for example, set up a trust fund from which a wife would receive the income during her lifetime (life tenant), after which it would be divided among the children (the remaindermen) Creation of a trust vesting a succession of interests at the outset may, under a proper plan, avoid a succession of inheritance and estate taxes that would diminish the property by a greater amount Gifts under a living trust may also be subject to lower tax rates than are imposed upon an estate at death (See Chapter 20) A very busy executive or a person who travelled much might find a trust a convenient way for turning over the job of investment management to another He could on the other hand stop short of a trust arrangement by giving a bank custodianship of property but retaining for himself the responsibility for policy in whole or in part

Present-day trusteeship offers a flexibility to meet changing conditions that can be highly desirable The creator of a trust can not only give the trustee wide powers of discretion in matters of investment policy, but can also permit him to pay out principal as well as income should emergencies or unforeseen events make that appear to be in the best interest of the beneficiaries This flexibility explains why life insurance proceeds are sometimes paid into a trust fund even though the life insurance company could make payments to the beneficiaries in the form of instalments or as an annuity Such powers of a trustee are determined by the provisions of the trust agreement or will under which the trust is set up

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[2] More exactly, a trust cannot continue for a longer term than the lives of a certain, sometimes limited, number of persons in existence at the time the trust is created, plus a period that would permit an unborn child to come into the world and reach the age of 21 The rule varies from state to state and often needs the interpretation of legal counsel

Although individuals may be and often are named as trustees, a substantial and increasing number of trusts are administered by trust companies While a trust company may be an institution devoted solely to trust work, such operations are commonly a division of a commercial bank, whose activities in that field are likely to be indicated in the corporate title[3] Such a corporate trustee has advantages over most individuals, especially as to (1) perpetual life, (2) financial responsibility, and (3) specialized ability in investment matters The health and longevity of any individual trustee is always uncertain and raises the question of how long and how capably he may pursue his responsibilities The capital of the trust company provides a measure of financial responsibility should it ever be derelict in the performance of its duties Finally, no matter how able the individual trustee, the cares of continuous investment supervision are likely to be burdensome as compared with the routine handling of such matters by an organization equipped for such work

**Factors governing trust policy.** The three factors that should govern the investment policy for trust funds are (1) the needs of the beneficiaries, (2) the terms of the trust, and (3) the restrictions and requirements in the law of the state in which the trust is administered Ideally, a fund should be invested as the beneficiary would invest it if he were a skilful and prudent investor so that the income results would fit his personal needs and tax position Actually, the trustee may be prevented from following this standard either by the terms of the trust or legal restrictions of the law Furthermore, where there is a group of beneficiaries, under a single trust, the trustee can only pursue a policy that recognizes an average of the varying requirements of the different persons as best he can, and the result may be less than satisfactory for one or more of those concerned Because the fitting of an investment program to the needs of the individual is discussed more fully in the chapter that follows this, only a hint of the broader differences need be noted here If the beneficiary is wholly or greatly dependent upon the income from the trust for living expenses and the fund is of only moderate size, current and regular income will be stressed. As the amount of the beneficiary's income increases, some income may be sacrificed for future growth, and some fluctuation in income would be less damaging to his standard of living. As the total income of the beneficiary rises, whether from trust or personal sources, income taxes mount in importance. Consequently greater consideration would be given to the purchase of tax-exempt securities and to investments that would offer the hope of long-term capital gains.

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[3] Statistical information on the volume and distribution of the personal trust business of national banks may be had from the *Annual Reports of the Comptroller of Currency,* as in that for 1949 on p 181

In the absence of a specific release in the trust instrument by the creator of the trust giving the trustee freedom to invest otherwise, the latter would be governed by the state laws on the subject. These laws fall into two broad classes: (1) those that use the "prudent-man" rule, that is, investment "only in such securities as would be acquired by prudent men of discretion and intelligence in such matters who are seeking a reasonable income and the preservation of their capital," and (2) those that provide specific lists of investments legal for trust investment. The former represents the growing practice, and New York, formerly the most prominent example of the latter class, moved to a midway position when it added certain investment options under the prudent-man rule to its legal list in 1950. Until this amendment of the law, New York specified substantially the same investments as legal for trustees as for its savings banks. Only in recent years has prudent trustee investment been regarded as properly going outside of the fields of high-grade bonds and first mortgages on real estate.

This emphasis upon the business risks in ownership investment and the ignoring of the purchasing power risk for debt investment in times of inflation was as customary in states following the prudent-man rule as in those with specific lists or requirements for legal investments. Qualified investments were selected in the former states in the light of court decisions affecting trustees in those jurisdictions. Recent years have seen a revolution in this point of view. The risk of losing purchasing power in the "conservative" debt forms of investment has been increasingly recognized. The widening spread between declining bond yields and common stocks referred to in earlier chapters has also influenced thinking. A third influence has been studies of dividend stability for selected groups of stocks that have indicated more regular income for groups than for individual securities. As a result, more and more states have broadened the concept of prudent investment. California, for example, enacted legislation in 1943 specifically authorizing trustees to invest in common stocks[4] A landmark was passed when New York state, a notably conservative state in such matters and one that had made "legals" for savings banks the rule for trustees, permitted the departure referred to above allowing trustees to invest up to 35 per cent of their funds in common stocks of suitable quality, that is, stocks in which a prudent man would invest Presumably, trustees will restrict themselves to stocks of corporations that have had a favorable dividend record over a period of years, have a conservative capital structure, and enjoy a good reputation The New York law requires further that both common and preferred stocks, except those of bank and insurance companies, must be fully listed on a registered national stock exchange

Whatever the laws of the state, the person creating a trust may impose more restrictive conditions upon or give greater freedom to his trustee Evidence exists that greater freedom is a common provision of trust instruments[5] One of the advantages of establishing a living trust rather than a testamentary trust is that the former permits the creator to work out an investment policy that represents his own as well as the trustee's ideas and insures a desirable degree of freedom The creator might, for example, favor some real estate investment or securities that were of less than investment quality Specific authority to make or to continue such a policy initiated by the creator after his death could be stipulated in the trust instrument Quite commonly the trustee is permitted to continue any investments already in the fund or any increases thereof, as by stock dividends He might also be permitted to make additions, as by the exercise of subscription rights Permission rather than an absolute requirement for continuance is desirable lest the trustee be bound to hold an investment long after changing conditions have damaged its income potential and value.

Because conditions vary so widely among beneficiaries, a consideration of fitting investments to such needs is deferred to the discussion of policy for individuals In general, where the beneficiary has property of his own, it would be logical to have the trustee follow the natural bent of trustees and hold the more "conservative" investments while the beneficiary invested his own personal funds in more venturesome commitments if any of the latter type were desired If the beneficiary were well-to-do, this division of investment task might result in the trustee's acquiring municipal obligations, or, if common stocks were desired in the trust fund, the more seasoned and sedate issues However, there will be occasions, as when the beneficiary is the recipient of such conservative fixed-income forms of investment as annuities, pensions, and life insurance instalments, when common stocks would be the logical medium for the trustee

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[4] In 1936 Trustee Herbert Hoover of Stanford University testified before a California court that some of the University's $24 million invested in seasoned bonds and first mortgages should be invested in common stocks The burden of his testimony was that devaluation of the dollar and bank credit inflation were reducing the purchasing power of income from fixed income investments Because the will of Leland Stanford had given trustees great latitude in investment, the court gave permission for the switch *Time*, August 14, 1939, p 53

[5] In a study of a sample of trusts in New York state, covering 20,000 trusts and an aggregate value of over $4 billion, the Trust Investment Study Committee of the New York State Bankers Association found that the proportion of trusts limited to legal investments was only about 20 per cent by value and not much over 30 per cent by number of accounts *Op cit*, p 21

If specific money amounts are to be paid out of the trust at some future time, the fund will have a special need for so much fixed value investments To the extent that fluctuating value investments seemed more logical for a given trust fund, the creator might substitute a percentage share of the fund for future distribution rather than a specific sum Or, if beneficiaries are likely to have an estate-tax problem, which is an especially likely contingency for aged beneficiaries, marketable investments, even though not of fixed value, are often indicated in order to assure that suf cient property can be liquidated to cover tax liabilities

When the fund is small and yet some common stocks are indicated, adequate diversification may be obtained by indirection In more and more states, the trustee is permitted to acquire the shares of investment companies [6] Some trust companies have also established common trust funds under their own care and management for the participation of their smaller trust funds

When a trust company has a sufficient number of trusts that could use the device, it may find it advantageous, where the law permits, to establish commingled, or common, trust funds [7] These are operated in much the same manner as the open-end investment company, except that they incur no selling costs Different funds could be set up by a single trust company to meet different needs For example, one fund might consist entirely of common stocks, another might be a balanced fund holding a mixture of bonds and stocks, and a third type might consist wholly of debt investments, such as bonds and first mortgages In states where "legal" lists are found, a fund might consist wholly of "legal" investments

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[6] Nebraska has legalized the purchase of investment company shares by trustees and life insurance companies New Hampshire authorized (1949) such shares for trustees, subject to the prudent-man rule, and also for savings banks under certain conditions Oregon authorized such purchases for charitable and educational trusts In 1947, Oregon abandoned the former "legal" list by adopting the prudent-man statute for trustees generally *Report of the Investment Companies Committee, Investment Bankers Association of America, Thirty eighth Annual Convention,* December, 1949

[7] A discussion of the purposes, the establishment and operation of these funds is given in American Bankers Association Trust Division, *Common Trust Funds* (New York The Association, 2nd ed., 1948)

In conclusion, the desirability of consultation between legal counsel of the creator of the trust and the trustee before the writing of the trust instrument should be noted Counsel is essential to assure conformity to the law and assist in anticipating contingencies for which provision should be made and which the layman might overlook Tax problems are frequently an important consideration The trustee, especially where a professionally equipped trust company is contemplated, should be consulted on the practicability and suitability of the plans being made Conference should also make it possible for the creator to estimate the character and attitude of the personnel who he expects will administer his trust He can gain an idea of the kind of an investment program they would be likely to pursue in the situation being planned

## Endowment Funds

Endowment, as the term is used here, includes gifts of money or other property to be invested fairly permanently for income by an institution devoted to some religious, charitable, educational, or scientific work Sometimes, however, the institution is permitted to spend the principal of the gift [8] Whether or not the investment of such endowment will be restricted to items legal for trustees will depend upon the laws of the state and the terms under which the gift was made

The investment problem of such institutions has much in common with that of individuals and is unlike that of the financial institutions studied in the preceding chapter Like the individual, these philanthropic and educational organizations need income to meet their "cost of living" rather than a certain sum of dollar assets behind their liabilities that will maintain solvency They need purchasing power In an economy with a stable price level, the natural tendency of these institutions would be to invest in debt obligations that involved a minimum of business risk But with inflation since 1933 and a declining return from bonds and real estate mortgages, there has been increasing pressure to invest in ownership types of investment, particularly common stocks, where yields have been more substantial

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[8] The late Julius Rosenwald, genius of the mail order business and philanthropist, believed that institutions should be required to use up the principal over a period of years so they would be compelled to return to the community for financial support His attitude represented partly a fear of perpetuities and partly recognition of the unwisdom of narrowly conceived charitable objectives, the purpose for which could disappear in time

In spite of this common basic need, endowment funds frequently differ from trust funds for individuals in ways that are significant for investment policy

**Permanence and liquidity.** As was noted in the previous section, individual trusts may have a need for some liquidity, or at least some marketability, because of anticipated principal distributions Such distributions, if they are for a stipulated sum of money or taxes that must be paid from principal, require salable investments Endowment funds, on the other hand, are almost always regarded as permanent, so that liquidity is a minor problem (Under "formula plans," discussed below, we shall see how marketability may be needed for a major portion of the endowment to permit shifting of investments with changes in the business cycle )

**Size of fund and diversification** While endowment funds may be small, they would be expected to be larger on the average than trusts for individuals A larger fund permits better investment diversification In the absence of diversification, those in charge of a fund would find it necessary to minimize business risk and select "conservative" investments of the debt variety The rise of the investment company, however, now permits a small endowment fund to obtain the effects of diversification by indirection

**Tax status.** In general, these nonprofit institutions enjoy exemption from the income tax levied upon the net income of business corporations [9] To a considerable extent these institutions are engaged in non-business functions often carried on by the government and to that extent they relieve the taxpayer of so much expense Charitable organizations, for example, engage in welfare designed to relieve the unfortunate for whom the community has come to feel an increasing responsibility In the field of higher education, private colleges and universities bear costs that would be considerable if added to the existing load of state and municipal institutions Often from one fourth to one half of the cost of such private education is cared for from endowment income and gifts, the remainder by tuition and other charges to the student Relief from the income tax helps these institutions to keep the latter charges low enough to continue to compete with public universities, which are supported largely by taxes

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[9] In 1950, the federal income tax laws were amended to subject to taxation the income of these institutions from certain real estate acquired by assuming debt rather than by cash investment Furthermore, the income from a business not incidental to the purposes of the institution has been held to be subject to the corporate income tax Were this latter rule not the case, it is feared that nonprofit institutions would enjoy a competitive advantage injurious both to ordinary business competitors and the revenues of the government

As a consequence of its tax status, endowment cannot be invested advantageously in tax-exempt securities when their yields are appreciably lowered by their tax status, as they have been since 1940 Nor do capital gains have any particular attraction as compared with ordinary cash income The pressing need for current income to meet budgetary requirements is, if anything, likely to lead to a preference for immediate and regular income, rather than appreciation and possibly increased future income

Possible restrictions in the state law or in the terms of the gift have already been referred to Sometimes gifts are made that require certain income payments be made to individuals during their lifetime, and the nature of these obligations must be given consideration in formulating policy Thus, a businessman might make a gift to a university with the stipulation that an income should be paid to himself and wife so long as either lived [10] In addition to such considerations, the charter and bylaws must also be studied for any provisions that might affect investment policy

**Management of endowment funds** In addition to the needs of the institution and any legal restrictions, formulation of policy should also give some weight to the abilities of and amount of time to be spent by those who will be responsible for the work of investment Risks that do not fall within the experience and abilities of the trustees or investments that require time and care beyond what may be reasonably expected of them are best avoided An undue scattering of investments beyond the needs of suitable diversification should be avoided to minimize supervision costs If the total endowment is sufficiently large, a special staff may be desirable to handle the details of investment and the making of recommendations In any case, some officer of the organization should have the primary responsibility for the continuing care, obtaining the necessary formal action of trustees, and effectuating policies adopted by the latter

Outside investment counsel is sometimes employed Their advice may be used either to supplement the work of the institution's own staff, or may represent the sole basis for recommendations to whomever has ultimate responsibility for action  The possible utility of the investment company for the servicing of smaller endowments and providing a form of indirect management has already been mentioned

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[10] For the donor, such a living gift might accomplish the double purpose of shedding certain investment cares at a time when health or advancing age made that desirable and of creating certain deductions from taxable income, merely by anticipating a gift planned for in his last will and testament to a favored institution.

**Endowment fund practice.** Fuller information is available concerning the investment practice of university and college endowments than for that of any other major group  A sample of the over-all practice of these institutions will implement our discussion of principles  While the figures for the two years given here are not wholly comparable, they are reasonably representative of trends in the distribution of investments by universities and colleges with larger funds [11]

COMPARISON OF PROPORTIONS OF UNIVERSITY AND COLLEGE ENDOWMENT FUND INVESTMENTS 1931, 1946

(The mean of the percentages of each fund at book value)

| | *1931* | *1946* |
|---|---|---|
| Bonds | 50 5 | 42 |
| Mortgages | 17 | 5 5 |
| Preferred stocks | 8 5 | 11.5 |
| Common stocks | 11 5 | 30 |
| Real estate | 9 5 | 8 |
| Cash and minor investments | 3 | 3 |
| Totals | 100 | 100 |

Bonds still occupy a dominant but declining place in these portfolios  Real estate mortgage holdings have declined to an even greater extent  The major offsetting change is found in the rise of common stocks from 11 5 per cent in 1931 to 30 per cent of the total in 1946  These same three significant tendencies appeared in a study of the endowment of major institutions published by the American Council on Education  Their figures for thirteen institutions with endowment from $2 million to $15 million showed bonds declining from 57.3 to 44 7 per cent between 1926 and 1943, mortgages from 11 9 to 6 0 per cent, while common stocks rose from 7.8 to 27.9 per cent in the same interval.[12] The trend toward common stocks was slightly more pronounced among the institutions with endowment over $15 million.

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[11] The 1946 figures were compiled by Scudder, Stevens & Clark, *Survey of University and College Endowment Funds* (New York  The authors, 1947), p 19, the 1931 figures by Wood, Struthers & Co , *Trusteeship of American Endowments* (New York  The Macmillan Co , 1932), but these latter figures are as adjusted and reported in the first source  The 1931 figures were for a smaller number of institutions, and because they were based on market rather than book value, the common stock values were revised upward for this table  Concerning other differences that affect the comparison, see the first reference, page 30  The proportions are also given for individual institutions and reveal widely variant policies

Further details in the Scudder, Stevens & Clark study reflect some other investment trends. United States obligations rose greatly in importance, from 2.5 to 20 per cent of assets, between 1931 and 1946. This growth was probably partly a matter of increased supply and partly a belief that the slight differential in yield between Governments and corporation bonds in the 1940's made it doubtful wisdom to reach for the additional return, which might prove less than the necessary premium for risk. Furthermore, life insurance companies were absorbing whole issues of choicer corporate bonds by private placement, making them unavailable for others. Municipals and foreign obligations, never of large importance to these funds, shrank still further. In purchasing common stocks, industrials were favored to the point of constituting two thirds of that group and 20 per cent of assets. The special esteem in which bank and insurance stocks are held was reflected in their achieving second place, 5 per cent of assets, in spite of the comparatively small total outstanding and their unlisted character. Utility common stocks amounted to 4 per cent of assets by 1946. While these last stocks show an attractive dividend stability they adjust but little, if at all, to changes in the commodity price level.

While such studies of proportions point up changing trends in the various fields of investment, they should not be regarded as offering any ideal standard. Practice among the different institutions varies widely, probably much more than among life insurance companies or among commercial banks. Such variations reflect differences in the temperament and abilities of those managing the various funds, as well as attempts to fit policy to the special needs and characteristics of the institution. As in the field of investment for individuals, room exists for differences that are not unsuitable.

**Formula plans.** With the expansion of common stocks to a major place in the portfolio, the matter of timing purchases assumes an importance not found in the case of bonds and real estate mortgages. Price fluctuations are so great that unfortunate timing of purchases can make a tremendous difference in yield and the possibilities of subsequent appreciation. As suggested in Chapter

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[12] Cain, J. Harvey, *College Investments under War Conditions* (Washington. The Council, 1944), American Council on Education Studies, Series III, Financial Advisory Service, Vol. VIII, No. 21.

25, the uncertainty of making accurate and successful predictions of even the major stock price movements that characterize the business cycle has caused many to abandon any attempt to profit from such swings They believe that the only sound investment policy is to invest more or less permanently, as funds become available, that is, for the "long pull," and emphasize the income prospects of the individual security For them, any attempt to take advantage of cyclical price swings is regarded as a speculative policy and undesirable They may, nevertheless, adopt a balanced program consisting in part of common stocks to meet the problem of inflation and in part of fixed value debt investments to meet any deflationary period

Recent years have witnessed a growing interest in more or less mechanical plans to profit from stock price movements, which have come to be known in investment circles as "formula plans "[18] They assume the continuance of wide price fluctuations for certain securities, chiefly common stocks, and a relatively stable market for certain other securities, namely bonds and preferred stocks of good investment quality The former are termed "aggressive" investments, the latter, "defensive" or "protective" investments They provide that commitments shall be made in both groups, but that purchases of stocks shall be made as their prices decline from the proceeds of bond sales and funds switched from stocks to bonds when the reverse condition prevails

Such plans may be classified roughly into three groups with considerable variation being possible in the method of the application of each In the first group are "equalizing" plans, which call for sales of stock when their total value has risen beyond a certain per cent of the portfolio so as to "equalize" or bring back the fund to standard proportions Similarly, purchases of stocks will occur when their prices decline sufficiently so as to restore the desired proportion In the second, or constant-dollar-fund, plan, an amount is determined for the stock portion of the fund If the market value of this portion rises sufficiently, any excess of value over the original amount is sold and invested in bonds  Under reverse conditions, bonds are sold to permit purchases of stocks sufficient to restore the original or "constant-dollar amount "  The third group of plans are known as variable-ratio, or sliding-scale, plans  They stipulate that the per cent or proportion of stocks in the fund shall be increased when the stock market is low and vice versa

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[18] Two short books should be read by those interested in this topic Tomlinson, Lucile, *Successful Investing Formulas* (New York Barron's, 1947), and Carpenter, H G, *Investment Timing by Formula Plans* (New York Harper & Bros, 1943) A brief description, a study of possible results, and discussion of the problem of trend for the sliding scale type of formula may be found in Ketchum, Marshall D, "Investment Management through Formula Timing Plans," and "Adjustment for the Secular Trend of Stock Prices in Formula Timing Plans," *Journal of Business of the University of Chicago,* July, 1947, pp 156–169, and January, 1948, pp 29–54 Other studies are Weston, J F, "Some Theoretical Aspects of Formula Timing Plans," *Journal of Business of the University of Chicago,* October, 1949, pp 249–270, Cottle, C S, and Whitman, W T, "Formula Plans and the Institutional Investor," *Harvard Business Review,* July, 1950, pp 84–96

To illustrate an equalizing plan, let us suppose a fund were set up on a 50 50 basis, dividing it equally between common stocks and bonds  Then, if stocks rose to where their proportion of the total was 60 per cent, a sufficient amount would be sold to restore their amount to 50 per cent of the fund  This step would not ordinarily reduce stocks to their original amount  For example, if, in a $10,000 fund, stocks originally amounted to $5,000, or 50 per cent, but subsequently rose to $7,500 in market value while the bonds remained unchanged in price, they would have become 60 per cent of the $12,500 total  Sales of $1,250 worth of stock and the purchase of the same amount of bonds would restore the original 50 50 balance but leave stock holdings more substantial than before

If instead of this constant-bond stock-*ratio* plan, a constant common stock *fund* were employed, then an amount equal to all of the growth in market value over the original constant-dollar sum would be sold and transferred into bonds  Thus in the preceding case all of the $2,500 of appreciation would have been converted into bonds with the result that the proportion of bonds would rise to 60 per cent instead of the original 50 per cent  Instead of equalizing the proportions, it results in a decreasing per cent of stocks as their market rises, and vice versa  It differs from the third, or sliding-scale, plan in that the proportions are not the result of a previously selected set of proportions but of keeping the stock fund a constant-dollar amount

A modification of the first type of plan was adopted at Yale University[14]  The initial ratios adopted were 30 per cent in equities and 70 per cent in fixed-income securities  If, through market appreciation, the percentage of equities rose to 40 per cent, enough would be sold to reduce them not to the original 30 per cent, but only to 35 per cent  Were the market to continue its advance, the process of reducing stocks from 40 to 35 per cent would be repeated  On the downside, equities would be allowed to decline until they reached 20 per cent before purchases would be made to restore them to the 25 per cent level Such a variation might be described as a "half-way equalization plan"

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[14] Tomlinson, *op cit*, p 130,

The variable-ratio, or sliding-scale, plan sets up definite proportions for the stock bond ratio at different stock market levels, with the per cent of stocks to be reduced as the market rises, and vice versa Such a plan involves some objective measure of the stock market as a basis on which the adopted percentages are to be applied An example of this type of plan is reported by Vassar College Their plan, originally adopted in 1938, has been gradually extended to one half of their endowment fund, the remainder being restricted to senior securities The level of the market is judged by the Dow-Jones industrial average Originally a level of 135 for that average was selected as the median point at which the part of the endowment subject to the plan would be kept one half in stocks and one half in bonds[15] The Finance Committee of the college is guided by a 10-year moving average of the Dow-Jones average but is permitted to use its own judgment in determining the median level It has varied its original median of 135 to a low of 130 and to a high of 145, which was used at the beginning of 1947 The initial purchases in a declining market are to be made when the market reaches the median level The initial 50 per cent proportion of stocks is stepped up in four jumps, when and if the average declines to various predetermined levels, each approximately 10 per cent below the preceding point, until the fund would be 100 per cent in stocks should the market decline far enough On the way up, no sales of stock are made until the market has risen 10 per cent above median Sales at this point and two other points, each substantially 10 per cent above the preceding point, would result in a complete switch from stocks into bonds The schedule of buying and selling points with the changing proportions at these points if the median were 145, would be as follows

| | *Dow-Jones Industrial Average* | *Division of Fund* | |
|---|---|---|---|
| | | *Stocks* | *Bonds* |
| Selling points on the way up | 160 | 35% | 65% |
| | 176 | 18 | 82 |
| | 194 | 0 | 100 |
| Buying points on the way down | 145 | 50% | 50% |
| | 130 | 65 | 35 |
| | 117 | 82 | 18 |
| | 105 | 100 | 0 |

Because of the appeal of its more precise statistical nature, a more alluring variation of this type of plan is the "seven-step formula plan" developed by the Keystone Company of Boston for the possible use of shareholders in its various open-end Keystone Custodian Funds The Dow-Jones industrial average is first plotted on a semi-logarithmic, or ratio, chart and a straight line drawn through the approximate bottoms of the bear markets since 1897 and another through the bull market tops since that date The extreme fluctuations above and below these lines in the 1929–1933 swing are ignored [16] This broad statistical pathway is then divided into five fairly equal channels by use of four lines parallel to and between the original two These five zones plus that above the uppermost line and that below the lowest line constitute the seven zones that give the plan its name At any time the set boundaries for the seven zones may be read from the chart by inspection, and they are projected into the future When the Dow-Jones average is in the middle zone, equal proportions of stocks and bonds (or "aggressive" and "defensive" securities) would be held for whatever proportion of the fund was to be handled by the formula plan As the market moves up from one zone to the next the proportion of stocks is reduced It is suggested that the proportion of stocks move from 10 to 90 per cent, instead of moving from zero to 100 per cent, as the average moves from the top to the bottom zone, so that some stocks and some bonds are always to be found in the fund Or the proportion can be made to vary from 20 to 80 per cent, or from 30 to 70 per cent The attraction of this plan lies in the apparently more "scientific" basis for measuring the levels for buying and selling on the basis of a statistically established trend The basic assumption is that the industrial stock market will continue to move in cyclical swings along a growth line advancing at a constant per cent, as it appears to have done for the half century since 1897 except for the extreme swing that found its top in 1929 and bottom in 1933

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[15] *Ibid*, pp 137–139

Critics of this plan would question the reliability or validity of any such secular trend for stock prices as a basis for the future They would point out that such growth appearing on a logarithmic scale chart suggests that the combination of such variable influences as (1) the growth of a varying selection of common stock equities, (2) the rate of earning for those equities, which makes price, (3) the rates at which the market capitalizes earnings, and (4) the commodity price level have combined to give a fairly constant rate of growth to common stock market prices Without attempting an analysis of this very complex problem, let us note the large influence we should expect the commodity price level to have upon earnings and stock prices Yet the fact that commodity prices have no clear-cut long-term or secular trend of a linear or logarithmic nature even for the last half century gives the cautious person doubts as to the discovery of an immutable growth factor, or trend, about which cyclical fluctuations of industrial common stocks can be expected to move with regularity in the future (See Figure 28 ) The precipitate decline of about one third in commodity prices between 1929 and 1933 may well have been a basic factor in the devastating decline in stock prices that broke out of the channel that confined their movement throughout most of the half century But if there can be one exception, others might arise, as from a continuing inflation or an extraordinary turn of world affairs that radically changed our economy

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[16] For an illustrative chart, see *ibid* Chart 6, p 88

In spite of such possible criticisms, formula plans have served a purpose in focusing attention upon a central problem of common stock investment For institutions such a plan has the special advantage of resolving debate and producing action in the matter of "timing " Where concerted action by a finance committee is something of a problem because of differences of opinion, such a device has attraction A similar argument for its use by the individual is that it forces him to sell when prices are high, in spite of the overwhelming tide of popular bullish sentiment that creates such peak prices Likewise it forces him to buy stocks and so run contrary to popular pessimism in depressions

The success of such plans will depend upon certain conditions (1) The future course of the securities markets will have to perform in a manner fairly similar to that of the past, which has been studied for testing the formula chosen (2) Suitably volatile securities must be selected for the aggressive portion of the fund and stable but marketable securities for the defensive portion (3) The stocks selected should be those whose cyclical price movements correlate well with those of the general market (4) Patience and staying power are necessary to give the plan time to work out A plan is more likely to work out over a long than over a short period Consequently only those funds that are committed to investment on a fairly permanent basis should be employed in this manner

Two conditions would militate against the full success of the customary formula plan (1) extended inflation or deflation that tended to destroy the statistical guideposts of the past as to market levels, or (2) any fundamental changes in our American economy It is also possible that some types of stocks may be more suitable for permanent or "long-pull" holding than for holding under a formula plan Special studies would appear desirable for growth stock performance and for the stocks of the regulated utility operating companies

Formula plans can be employed by individuals as well as for endowment funds With their smaller average portfolios, individuals are more likely to find their adoption made easier by investment in suitable investment company shares Individuals may, however, choose to restrict their investment in fluctuating common stocks because of a desire to keep much of their resources in liquid, stable form despite the purchasing power hazard.

# 28

# Investment Policy: Individuals

Unlike the case of commercial banks and insurance companies, there is no single standard that can be set up as a basis for discussing investment programs for individuals. A program well adapted to one individual may be ill adapted to another. In other words, any analysis of the investment problem of the individual must be predicated upon a study of the income requirements of the individual, his age, his business or professional situation, other assets owned, his tax status, his family status, and, in fact, all the factors that may have an influence upon his investment requirements.

Obviously a young man starting on his life's career will have quite different objectives than a man advanced in years and approaching retirement. Likewise, the requirements of a middle-age, successful businessman will not be the same as those of an elderly widow who is completely dependent upon the income of her late husband's estate. The most logical approach to a study of the problem of the individual investor, therefore, is to proceed first with a discussion of the more important factors that have a bearing on the individual problem and then to review briefly the applicability of each of these major factors to several of the more common types of individual investors.

**Life insurance and the individual program.** No analysis of the individual's investment problem would be complete without a brief discussion of life insurance, not as a vehicle of saving or as a channel for investing, but as providing an element of immediate protection. The function of life insurance, therefore, may be said to provide in the earlier stages of a man's career for the necessary principal sum that may later be saved, but which would not be acquired should he die prematurely

It is true that certain forms of life insurance do provide, to some degree, a vehicle for investment In view of the relatively low rate of return calculated on the reserve account under present-day conditions, and in view of the loading charges necessarily added to the actuarial cost of insurance, we shall consider life insurance in this work not as a medium of investment but purely as a means of affording protection There are certain special cases, particularly in the case of elderly people, where annuities may be considered as a means for converting a given sum into a series of annual or of monthly payments extended through the balance of their life A brief discussion of this use of annuities will follow later

**Types of life insurance** Although varying in minor details, life insurance as written in this country may be said to fall into three major categories, distinguished primarily by the relative amount of insurance as contrasted with investment purchased through the policy

The more general types of life insurance may be classified broadly as (1) term insurance, (2) ordinary life, and (3) endowment insurance These three types, or modifications of them, are designed to meet the specific requirements of the insured, and vary in respect to annual cost according to the amount of investment that is being purchased along with insurance protection

Term insurance, in general, provides for a maximum of insurance protection, and does not provide the insured with any type of savings program Term insurance may be taken for any term of years, usually for a period of five years, with certain renewable and conversion features for which a charge is made in addition to the strict insurance cost Because of the fact that term insurance provides only for straight insurance for a specific term and at an annual cost predicated upon group mortality experience plus the necessary loading expenses, its cost per $1,000 of coverage is lower than any other type of insurance

In the case of the ordinary life policy, the insured pays premiums throughout the life of the policy at a flat rate During earlier years, this rate is above the cost of insurance, measured by mortality tables, during later years, the annual premium level is below the actuarial cost of insurance Thus, during the earlier years, the insurance company builds up a reserve behind the policy The funds constituting this reserve are invested and produce a return that reduces the cost of the insurance

Premiums may be adjusted so that after a given number of years the reserve will have been built up to a level where no additional payments need be made Thus we have "20-year" or "30-year" ordinary life policies, the time designation referring to the number of annual payments that must be made to achieve a reserve level sufficient to meet actuarial requirements Obviously, the shorter the period the larger the annual payments must be in order to achieve the required reserve level Such policies, in which all the premiums are prepaid in a limited number of years, are classified as "limited payment" life policies

At any given time, both the ordinary life policy and the limited-payment life policy will have a cash surrender value representing the policyholder's equity in the general reserve, and equivalent to the payments that he has made, plus accumulated interest on the reserve and less the actual insurance cost of his policy The amount of cash surrender value at any time represents the amount of actual savings that the insured has accumulated through the insurance contract

The endowment policy differs from the ordinary life policy in that at the end of a specific period, say 20 or 30 years, depending on the contract, the reserve is built up to the face value of the policy and the insured may receive the face value of the policy or he may leave the amount then due with the insurance company and receive interest (or dividends) thereon at a specific rate in the case of a stock company, or at the rate earned on the reserve in the case of a mutual company Naturally, the annual premiums in respect to endowment policies are set sufficiently high to provide for the accumulation of reserves at a more rapid rate than in the case of a paid-up life policy The endowment policy may be said to feature a larger element of investment than either of the other two types of insurance

Where insurance is used as a principal vehicle of saving and investment, obviously the endowment type of policy is preferable. Where insurance is merely used as an adjunct to an investment program to provide initial protection, some form of term insurance will prove the more desirable, since this type of insurance offers nothing but protection and involves the lowest premium cost

**Current income vs capital appreciation.** An important and, in fact, a fundamental consideration in respect to the development of any individual program resolves itself around the extent to which current income, as against capital appreciation, shall be emphasized This is particularly true in the case of equity investments All too frequently investors are impressed with the current yield of a security without reference to its ultimate appreciation possibilities Where the position of the investor is such that he is in a position to wait for capital appreciation, he will profit more by accepting his return in the form of growth in the value of his investment than in the form of current income

Thus, a corporation with a per share book value of $75, earning at a rate of 16% on this book value, will have earnings of $12 a share If, now, this enterprise is in an industry that permits expansion, it may well choose to expand by retaining a portion of earnings for reinvestment in the business So long as retained earnings can be invested at a 16% rate, the common stockholder in the long run will be better off to have a large share of current earnings retained, and thus compounded at 16%, rather than to receive such earnings in the form of current dividends This statement is at least applicable to investors not requiring an immediate return and who do not have an opportunity themselves to reinvest dividends at a 16% rate of return

It is because of this type of reasoning that investors frequently choose to make equity investments in corporations that have strong growth characteristics The customary tests of growth are (1) a high rate of earnings on invested capital, (2) a low dividend payout ratio, and (3) a tendency for the rate of earnings on invested capital to remain constant (or possibly to increase) rather than decrease as total investment is increased In the case of growth companies, it will usually be found that plant investment increases *pari passu* with increases in net working capital

Another benefit accrues to stockholders in this type of corporation when capital is required at a more rapid rate than can be provided for by ploughback Where outside capital is brought in through sale of senior securities, debentures, or preferred stock, the cost of such capital is limited by a stated return, the interest rate or the stated preferred dividend rate, and where this stated rate is below the amount earned on the capital invested, the common stockholder's earnings are further increased On the other hand, where capital is secured by issuing additional common stock, the price at which the stock is sold is frequently in excess of book value, thus increasing the book investment behind the shares of stock outstanding prior to the new issue

The several concepts just discussed are of sufficient importance to warrant a brief examination of two diverse types of companies, Abbott Laboratories, a strong growth company, and the Bullard Company

Abbott Laboratories, for the past 20 years, particularly for the past ten years, has been marked by strong growth characteristics, and is furthermore a member of the ethical drug and pharmaceutical industry, an industry that has evidenced strong growth characteristics The Bullard Company, on the other hand, is a member of the machine tool industry, an industry characterized by

ABBOTT LABORATORIES, INC
FINANCIAL ANALYSIS, 1929–1949

| *Capitalization* | *1929* | *1936* | *1940* | *1949* | *Period Change* |
|---|---|---|---|---|---|
| Bonds | — | — | — | — | |
| Preferred stock | — | — | $ 1,292,200 | — | |
| Common stock | $2,640,000 | $6,440,000 | 10,887,695 | $25,351,905 | |
| Surplus | 996,688 | 1,547,635 | 2,929,005 | 27,223,636 | |
| Total Investment | $3,636,688 | $7,987,635 | $15,108,900 | $52,575,541 | $48,938,853 |
| Net current assets | $1,972,083 | $5,598,317 | $10,647,035 | $34,405,662 | $32,433,579 |
| Plant account, net | 1,316,412 | 1,894,451 | 3,031,404 | 14,686,939 | 13,370,526 |
| Other assets, less Other Liabilities | 348,193 | 494,867 | 1,430,461 | 3,482,941 | 3,134,748 |
| | $3,636,688 | $7,987,635 | $15,108,900 | $52,575,541 | $48,938,853 |

| | *1929* | *1936* | *1940* | *1949* |
|---|---|---|---|---|
| Earnings on common | $591,014 | $1,415,276 | $2,239,408 | $10,010,500 |
| Number of shares | 120,000 | 640,000 | 755,204 | 3,739,814 |
| Earnings per share | $ 4 93 | $ 2 21 | $ 2 89 | $ 2 68 |
| Earnings per 1949 share* | 0 29 | 0 53 | 0 69 | 2 68 |
| Dividends per share | 2 40 | 1 75 | 2 15 | 1 80 |
| Dividends per 1949 share* | 0 14 | 0 42 | 0 51 | 1 80 |
| Price per share | 44 00 | 53 88 | 59 75 | 44 00 |
| Price per 1949 share* | 2 63 | 12 83 | 14 23 | 44 00 |

* Adjusted for stook dividends during period

*10-Year Record of Earnings*

| *Year* | *Average Book Value of Equity* | *Earnings Available* | *Dividends Paid Out* | *Per Cent Earned on Book Equity* |
|---|---|---|---|---|
| | (In $1,000's) | | | % |
| 1940 | 13,469 | 3,129 | 1,623 | 23 23 |
| 1941 | 14,066 | 4,078 | 1,624 | 28 99 |
| 1942 | 14,657 | 5,431 | 1,435 | 37 05 |
| 1943 | 15,924 | 3,166 | 1,511 | 19 88 |
| 1944 | 19,639 | 2,920 | 1,870 | 15 08 |
| 1945 | 22,472 | 3,037 | 1,870 | 13 51 |
| 1946 | 30,675 | 10,761 | 5,244 | 35 08 |
| 1947 | 40,365 | 10,916 | 6,077 | 27 04 |
| 1948 | 44,816 | 11,121 | 6,357 | 24 81 |
| 1949 | 48,837 | 10,011 | 6,732 | 20.50 |

*Stock Dividends*

| | |
|---|---|
| 1935 | 33 1/3% |
| 1936 | 200% |
| 1939 | 5% |
| 1946 | 100% |
| 1949 | 100% |

One 1929 share equivalent to 16 8
1949 shares

THE BULLARD COMPANY
FINANCIAL ANALYSIS, 1929–1949

| *Capitalization* | *1929* | *1936* | *1940* | *1949* | *Period Change* |
|---|---|---|---|---|---|
| Bonds | — | — | — | — | |
| Preferred stock | — | — | — | — | |
| Common stock | $4,829,488 | $1,051,125 | $1,051,125 | $1,051,125 | |
| Surplus | | 1,300,183 | 3,050,582 | 7,136,278 | |
| Total Investment | $4,829,488 | $2,351,308 | $4,101,707 | $8,187,403 | |
| Net current assets | $1,713,298 | $1,206,111 | $1,721,231 | $5,182,815 | $3,469,517 |
| Plant account, net | 2,981,791 | 1,139,786 | 2,352,480 | 3,634,114 | 652,323 |
| Other assets, less Other liabilities | 134,399 | 5,411 | 27,996 | (629,526) | (763,925) |
| | $4,829,488 | $2,351,308 | $4,101,707 | $8,187,403 | $3,357,915 |

| | *1929* | *1936* | *1940* | *1949* |
|---|---|---|---|---|
| Earnings (net after taxes) | $993,086 | $691,701 | $1,697,408 | $520,882 |
| Number of shares | 276,000 | 276,000 | 276,000 | 276,000 |
| Earnings per share | $ 3.60 | $ 2.51 | $ 6.15 | $ 1.89 |
| Dividends per share | 2.00 | 1.75 | 2.00 | 1.75 |
| Price per share | 39.88 | 28.13 | 30.00 | 15.38 |

*10 Year Record of Earnings*

| *Year* | *Average Book Value of Equity* | *Earnings Available* | *Dividends Paid Out* | *Per Cent Earned on Book Equity* |
|---|---|---|---|---|
| | (In $1,000's) | | | % |
| 1940 | $3,529 | 1,697 | 552 | 48.14 |
| 1941 | 4,746 | 1,998 | 690 | 42.10 |
| 1942 | 6,230 | 2,391 | 690 | 38.22 |
| 1943 | 7,306 | 1,257 | 690 | 17.21 |
| 1944 | 7,755 | 567 | 138 | 7.31 |
| 1945 | 7,935 | 692 | 552 | 8.72 |
| 1946 | 7,934 | 314 | 276 | 3.96 |
| 1947 | 7,826 | (85) | 138 | (1.08) |
| 1948 | 7,863 | 435 | 138 | 5.53 |
| 1949 | 8,099 | 520 | 345 | 6.42 |

*Stock Dividends*
None

lack of growth. Furthermore, the Bullard Company itself, for a period of twenty years, has not exhibited any growth. Important financial data are presented in respect to each of these companies. Certain observations are then made as to clues that must be sought in order to permit classification of a given company as a growth company or as a static or regressing company.

It does not require much analysis to show that at any time during the period under consideration the investor would have fared better by investing in Abbott Laboratories stock. Thus, in 1929, an investment of $4,400 would have purchased 100 shares of Abbott, whereas $3,988 would have purchased an equivalent amount of Bullard common In 1949, the 100 shares of Abbott would have been represented by 1,680 shares worth a total market value of $73,920, without adjusting for certain rights which, if sold, would have added to this value The 100 shares of Bullard, on the other hand, would have been worth $1,538 The difference in favor of the Abbott purchase would, therefore, have been $71,970, exclusive of any reference to the larger dividends received on the original purchase of 100 shares of Abbott stock At 1949 the current annual dividend return on the Abbott investment was $3,024, as against an annual return of $175 on the Bullard investment With the passage of time the dividend returns on growth investments tend to increase substantially, thus giving the investor a larger current income on his original investment, and possibly at a time in life when this increase in income becomes increasingly important

The question may be asked, is it possible to detect growth characteristics in a given company before such growth becomes a "fait accompli"? There are certain characteristics that mark growth stocks

1 Growth stocks usually show a satisfactory ratio of earnings to book value over a period of years despite increases in aggregate book investment Thus, Abbott Laboratories earned between 13 51% and 35 08% on its equity investment from 1940 to 1949, and never earned less than 20% in any year when excess profits taxes were not applicable Bullard Company, on the other hand, earned at very high rates on invested capital during the war However, the ratio of earnings to book equity exhibited a declining tendency, and as early as 1943 dropped below the rate shown for Abbott Thereafter, the rate of earnings on equity investment declined precipitously

2 Slow growth companies tend to permit surplus earnings retained in the business to remain in the form of "net quick" assets rather than to employ them in plant expansion The reason is obvious, such companies do not find plant expansion profitable Over the 20-year period studied, Bullard increased its net plant investment from $2,981,791 to $3,634,114, an increase of $652,323, while net quick assets increased from $1,713,298 to $5,182,815, an increase of $3,469,517 During this same period, Abbott Laboratories increased its plant investment from $1,316,412 to $14,686,939 Book figures do not always tell the

entire story Many manufacturing plants in World War II acquired plant assets under certificates of necessity, which were entirely amortized against income during and shortly after the war.

3 Growth companies frequently, although not necessarily, pay out a relatively small proportion of earnings as dividends and tend to sell on a relatively low dividend-yield basis

4 Growth companies are also characterized by emphasis on research and product development, as well as by energetic management, factors not always subject to statistical analysis

5 During any given period, certain industries are favorably situated in respect to growth The heavy-machine tool industry is not such an industry today On the other hand, certain small tool manufacturers have exhibited excellent growth Certain other industries show growth characteristics, but for one reason or another are unable to translate growth into profits The electric utility industry and other regulated industries have, in many cases, had excellent growth records in recent years, but this growth has not been carried through to the benefit of the stockholders because of profit limitations Certain airline companies also have experienced profitless growth The competitive environment of industries sometimes acts as a restriction on profitable growth

The purpose of the preceding discussion was to emphasize the desirability of planning an investment program as far as it involves common stocks around growth situations, with emphasis on growth rather than on current yield This policy recommends itself particularly where the investor involved can allot adequate time to permit the achievement of satisfactory results

**Allocation of funds between stocks and bonds.** The percentage of stocks to bonds in one's investment program can undoubtedly be placed at higher levels in the case of a young man than in the case of an older individual Omitting from consideration for the time being the function of common stocks as a hedge against inflation, one can argue for a higher percentage of common stocks where the individual can provide time necessary for growth to resolve itself into capital appreciation

In the case of investors whose need for current income and regularity of current income must be emphasized, and where longer-term capital appreciation is of less value, emphasis may be placed on stocks with higher current yields, but which may lack strong growth characteristics High-grade public utility common stocks come in this category, as well as some of the stocks of food companies Stocks of this nature, particularly public utility stocks, cannot be relied upon for either material growth or capital appreciation, but do enjoy regularity of income

**Common stocks as an inflation hedge** The problem of inflation and its impact on our economy today has emphasized the risks inherent in fixed-income securities, bonds, notes, and preferred stocks, as well as savings accounts, arising from the declining value of the dollar in terms of purchasing power This inherent disability applies to fixed income securities regardless of how high their quality may be

Nearly all of the countries in the world have experienced inflation to some degree during the present century due to the financial burdens arising from two great wars Currencies of the United States and Canada have shown the greatest resistance to depreciation up to date, but the existence of a current federal debt of $250 billion and the prospect of additional debt arising from heavy military expenditures for some time to come raise doubt in respect to future dollar stability

Individual investors, as well as trustee investors, are thus faced with the problem of protecting their accumulated funds, as far as possible, from depreciation in terms of purchasing power A general rise in the price level is, of course, equivalent to a decline in the value not only of the principal of a fund invested in fixed income securities but also of the income therefrom, in terms of the goods and services such income or principal will purchase Losses in value resulting from a decline in the relative value of the dollar are not fully appreciated by many investors since the price of the security (bond or preferred stock) may remain unchanged, thus giving the false appearance of stability Yet, there may be just as real a loss if, say, the general price level rises 100%, as would be reflected by a decline of 50% in the price of the security, assuming a static price level Investors are highly sensitive to changes in the market values of their securities but curiously enough tend to ignore losses in values measured by purchasing power

Common stock represents pure ownership of the residual equity of a corporation after prior obligations have been paid off at their stated values To the common stockholder, therefore, goes the residual earnings of the corporation after prior claims have been met It will be seen that, unlike a bond or preferred stockholder, the common stockholder has an investment in goods, that is, brick and mortar, inventories, machinery, in fact, in all the properties of the corporation A rise in prices should logically be accompanied by a rise in the value of the properties of the corporation, and, consequently, a rise in the value of its stock

The extent to which a given common stock will afford protection against inflation, however, is not as simple as the preceding statement indicates Stocks representing ownership in business enterprises do not necessarily rise because of an advance in the general price level If for some reason the company's earnings do not increase under inflation, the stockholder will fail to benefit Companies that purchase a substantial portion of their raw materials from other companies, and that are subject to heavy labor costs, may actually do more poorly during periods of rising prices than during periods of falling prices Companies, on the other hand, that own large amounts of raw materials or natural resources are likely to profit Thus, oil companies, steel companies with large reserves, and mining companies stand to profit during periods of inflation Merchandising companies may profit from a rise in prices while goods are on their shelves, as well as from a step-up in the tempo of business, but the difficulty of replacing stocks may become a distinct disadvantage

Purely for illustrative purposes, the following indices are given to show the manner in which certain classes of stocks fared during the French inflation of the 'twenties

INDEX OF PRICES IN FRANCE*

| *Year* | *Cost of Living Index* | *Common Stock Avg* | *Bank Stocks* | *Northern Collieries* | *Metallurgical Cos* | *Chemical Cos* | *Textile Cos* | *Railroads* | *Gas Cos* | *Electric Cos* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1913 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1919 | 260 | 123 | 94 | 90 | 128 | 144 | 119 | 73 | 60 | 98 |
| 1920 | 371 | 151 | 106 | 137 | 163 | 121 | 135 | 63 | 57 | 90 |
| 1921 | 337 | 113 | 92 | 107 | 108 | 144 | 81 | 60 | 59 | 85 |
| 1922 | 301 | 119 | 94 | 108 | 92 | 132 | 108 | 71 | 72 | 96 |
| 1923 | 334 | 172 | 114 | 166 | 118 | 174 | 232 | 84 | 100 | 143 |
| 1924 | 380 | 208 | 119 | 183 | 105 | 201 | 482 | 76 | 142 | 186 |
| 1925 | 425 | 200 | 107 | 168 | 76 | 169 | 442 | 61 | 134 | 182 |
| 1926 | 554 | 233 | 142 | 207 | 95 | 213 | 442 | 72 | 157 | 208 |
| 1927 | 557 | 287 | 196 | 249 | 110 | 257 | 480 | 105 | 213 | 313 |
| 1928 | 566 | 415 | 323 | 342 | 197 | 424 | 861 | 123 | 332 | 524 |
| 1929 | 604 | 507 | 365 | 534 | 290 | 523 | 986 | 133 | 618 | 693 |
| 1930 | 629 | 437 | 324 | 510 | 243 | 412 | 706 | 141 | 617 | 673 |
| 1931 | 617 | 309 | 244 | 312 | 126 | 260 | 369 | 125 | 525 | 534 |
| 1932 | 572 | 246 | 190 | 230 | 85 | 200 | 234 | 94 | 484 | 458 |

* Taken from Roger W Babson, *If Inflation Comes* (New York Stokes, 1942), p. 166

It will be seen that through 1929 the composite list of stocks performed fairly well as an inflation hedge, having advanced from

100 to 507, during which period the cost of living advanced from 100 to 604   Following the 1929 depression, stocks fell off more rapidly than did the cost of living index   Strangely enough, the metallurgical companies did rather poorly, as did bank stocks and railroads   The only manner in which banks benefit by inflation is through an increase in the volume of business as the money supply increases   Their stock in trade is the depreciated currency itself, either in the form of money, bonds (fixed income securities), or loans   The close association between the railroad industry and the French government accounts in part for the relatively poor performance of this group   Both the gas and electric groups advanced sharply   This situation would be much less likely to occur in the United States due to the effects of regulation   Thus, any attempt to use common stocks as a hedge against inflation requires a careful analysis and selection of those stocks most likely to participate in larger profits created by the forces of inflation

**Income taxes and effect on personal income**   Individuals today are subject to very high taxes on income, a factor that must be given proper consideration in determining investment policy   The progressive nature of the present (1950) law with respect to individual income taxes is well illustrated by an examination of taxes applicable to certain brackets

| *Income* | *Tax* (applicable to single individual—no dependents) |
|---|---|
| $ 16,000 to $ 18,000 | $ 5,200, plus 50% of excess over $ 16,000 |
| $ 50,000 to $ 60,000 | $ 26,820, plus 75% of excess over $ 50,000 |
| $150,000 to $200,000 | $111,820, plus 90% of excess over $150,000 |

(Excluding a small percentage reduction applicable to 1950, but to be dropped in 1951 )

The above schedule of rates is by no means complete and is, of course, subject to changes in the case of a married man whose income is split between man and wife   Nevertheless, it is at once apparent that the tax problem today confronts even the individual with a middle-class income   The income received from obligations of any state, municipality, territory, or territorial possession of the United States is today exempt from all normal income and surtaxes   The same applies to income derived from certain Housing Authority bonds, where by statute tax exemption has been granted

Let us now consider briefly the position of a man whose next increment of income will be taxed at 75%, that is, from the preceding table, a man whose income is now at $50,000 per annum   The average tax on the first $50,000 of income is 53 65%   If his income is increased, his tax on the marginal increment is 75%, and it is this rate that he must consider if he intends to make an investment. If such a man purchases a stock yielding 6%, his net return after taxes obviously is only 1.5%, hardly an adequate return to compensate for the added risk involved in an equity investment. A man whose income currently is at the $150,000 level is in a worse position. A 6% common stock investment would yield this individual only .54%. Small as these returns are, they are large compared with the return on a taxable high-grade bond. If our first individual were to purchase a Series G Savings Bond to net 2.50%, his net return would be .625%, whereas the second individual would net only .25% from such an investment.

Obviously, tax-exempt securities, although currently selling at low yields, offer attractive opportunities to individuals whose income is subject to these higher surtax levels. In such cases, funds to be allocated to fixed income securities may well be placed in state or municipal bonds or other types of bonds whose income is exempt from both normal and surtaxes.[1]

As distinct from ordinary income, income in the form of long-term taxable gain is subject to a tax no greater than 25%. "Long-term capital gain" is defined as the profit realized from the sale of assets held six months or longer. Only 50% of long-term capital gain need be reported and the maximum rate applicable thereto is the taxpayer's maximum rate or 50%, whichever is lower, thus justifying the statement that long-term capital gains are taxed at a rate not exceeding 25%. The comparatively low rate applicable to long-term capital gains makes it desirable for investors in high income brackets to seek equity investments that have opportunities for capital gains rather than those offering attractive current dividend yields, since, regardless of the current dividend yield, the net return after taxes will be negligible. Strong growth stocks, such as Dow Chemical common, whose dividend yield is small but whose capital appreciation over a period has been large, qualify in this respect. The stocks of high-grade banks operating in large and growing communities have customarily sold at low yields but have shown consistent long-term growth as their communities have grown. Such stocks have proved profitable for investors with large incomes. Other types of securities that emphasize the element of capital gain, as against current income, are (1) nondividend-paying stocks of companies whose position is improving and that may initiate or resume the payment of dividends at some future date, and (2) preferred stocks with accumulated dividends whose outlook forecasts eventual resumption of dividends By properly selecting the type of security, investors in high tax brackets can still employ a portion of their funds in equities without being subject to an undue tax on the returns from such investments

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[1] Prior to February, 1941, United States Bonds and Notes were issued with varying degrees of tax exemption. Since that date, no direct obligations of the United States have been issued having a tax exempt status. There are, however, still outstanding some issues with partial tax exemption, that is, exemption from the normal income tax, which at 3 per cent is relatively unimportant for individual investors.

**Diversification, a prerequisite to sound policy.** Diversification is quite as important to the individual investor as to the institutional investor, and the types of diversification available to the individual are quite similar Let us consider first diversification between the two major types of securities fixed income securities and common stocks The individual has wide latitude in respect to his relative emphasis on stocks and bonds since he is not subject to any legal limitations Should he divide his fund equally between stocks and bonds, or should he favor a greater percentage of stocks or of bonds? This question, of course, can only be answered by reference to the investor's own personal situation and requirements In setting up and discussing several types of individual investors, this question will be more thoroughly discussed

Another type of diversification involves distribution of investments as between industries and then between companies within an industry In the case of bonds, it is possible not only to achieve diversification in this manner, that is, by apportioning bond holdings over different industries and different obligors within a given industry, but also to achieve diversification in respect to maturity dates Diversification of bondholding by maturity dates is desirable in order to avoid the possibility of having heavy maturities coming due at a time when interest rates are low and reinvestment less profitable, or to avoid the possible loss of reinvestment opportunity should interest rates rise after an investment has been made In the case of municipal investments, geographical diversification should be sought

**Timing of investments bonds** The usefulness of attempting to time bond purchases to obtain maximum results for an investment program is regarded as debatable The question of timing bond investments is related essentially to movements in interest rates For many years prior to the middle 'thirties, interest rates fluctuated over a rather broad range in response to those underlying factors that influenced capital supply and demand After 1932, the year that marked the depth of the 1929–1932 depression, yields on high-grade bonds declined until 1946 Since 1946, there has been some fluctuation in respect to high-grade corporate bond yields, but the range over which long-term interest rates have varied is not large Municipal bonds during earlier years tended to vary in respect to (1) bond prices in general, and (2) the value of their tax-exempt status During recent years, the two-fold influence of declining yields on high-grade bonds and the heavy increases in tax rates applicable both to corporations and individuals has depressed the yields on municipal bonds to extremely low levels

To some extent during the late 'thirties, and in particular during and since World War II, the yields on government bonds, and as a natural corollary yields on high-grade corporate bonds, have been subject to very definite control through open-market operations of the Federal Reserve System A pattern for long-term rates on government bonds has been fixed at about 2½% Short-term rates have been subject to some variation So long as this control exists, and the heavy debt of the Federal Government makes low rates appear alluring, the private investor is not left with much choice in the matter of timing his bond purchases The policy of staggering maturity dates, however, is still good policy as a hedge against either the unwillingness or the inability of the Federal Reserve to maintain permanently the present low lovel of rates

**Timing of investments: stocks** Movements in the general level of common stock prices have historically been characterized by wider amplitudes than have similar movements in bond prices, and the length of cycle has been shorter, thus posing for the investor a more continuous and a more difficult problem of timing than is presented in connection with the purchase of bonds Cyclical movements in stock prices have been discussed in other sections of this book, as well as methods of interpretation Various theories have been developed to facilitate the forecasting of movements in stock prices, but none of these theories has proved infallible Most individual investors, therefore, have found it necessary to follow some plan that does not require ability to pick the tops and bottoms of cyclical swings in common stock prices, in order successfully to articulate their programs As we have seen, such plans, calling for changing the amount of stocks and bonds as a percentage of total holdings at different market levels, are called formula plans

To illustrate more concretely how the individual may proceed to devise a formula plan for varying the percentage of stock holdings to total holdings, there is presented a chart portraying movements in the Dow-Jones Industrial Stock Index for a period of over half a century This chart shows the annual high and low levels reached by the Dow-Jones Industrial Average from 1897 to 1950. Three

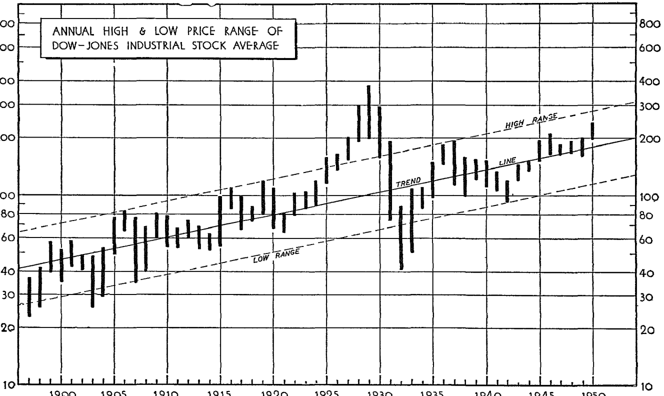

Figure 29 Dow-Jones Industrial Stock Average Fitted with Trends for Formula Timing

lines are then drawn· the top line defines as closely as possible (by means of a straight line) the tops of the bull markets in stocks, and the bottom line similarly defines the bottoms of the bear markets Throughout this 54-year period the index broke through the top line in only six years In seven years it broke through the bottom range line In no case did the market stay below the bottom range for any extended period It broke through the top line for some six years in succession, years encompassing the great boom of the 1920–1929 period, and, in fact, remained continuously above the line for two years

The middle line may be termed a line of trend This line of trend is extended through the data in such a manner as to equate the areas defined above and below the trend line If the experience of the past half-century is any indication of future experience a program might well be predicated on the assumption that as far as possible, the proportion of stocks to total funds should be increased during periods when the market is below the trend line, and, conversely, that the per cent of the entire fund invested in equities should be decreased as the market moves above the trend line Just how the actual percentage is to be varied from time to time will depend on a variety of factors, including the predilections of the individual

Let us assume that in a particular case up to 60% of the fund may be allocated to equities Possibly our investor will say that at any time the market moves to within a level 90% of the distance from the trend line to the low range, 60% of the fund should be invested in common stocks When the market moves to the trend line, the amount invested in stocks should be reduced to 50% Here again a variation may be made by choosing either 50% of cost or of current market value As the market advances, selling levels may be established, so that when the market reaches, say, 90% of the distance from the trend line to the upper range, holdings shall be reduced to, say, 20% to 25% of the total fund It is unnecessary to specify here the exact formula to be applied in working out a plan of this type There are many combinations of percentages and levels that may be used Choosing the exact combination must be left to the individual investor The essential point to emphasize is that a plan of this type is automatic, and, once adopted, requires little further application of judgment—hence, the necessity for attempting to forecast the many and varied movements that occur on the stock exchanges is largely eliminated

Formula plans and timing devices relative to common stock purchases should not be regarded as a means for making trading profits, but rather as related to long-term capital appreciation In no event should either type of device be considered as a substitute for the careful analysis required in making proper selections of individual issues to be added to one's common stock portfolio

**Miscellaneous factors** There are, of course, a number of miscellaneous factors that might be considered as deserving some attention at this point, such as the question of the degree of risk that the individual may feel inclined, or may be financially able, to assume, the amount of time he can devote to the proper execution of his plan, a consideration of his other assets and other sources of income, and the extent to which liquidity may be required to meet contingencies or inheritance taxes

**Types of investors.** With the more important components of the problem of the individual investor in mind, it now remains necessary to show in a general way how these specific factors should be weighed and fitted into a given program. Obviously, emphasis will vary with different individuals, depending on a wide variety of factors surrounding the particular individual, and it is quite impossible to cover every case A brief discussion of certain typical situations will serve to illustrate the manner in which a program may be adapted to a given situation

**The young businessman.** The young man with a reasonable outlook for a successful career, with earnings increasing during his early and middle age, will be discussed first Such an individual will first require adequate insurance to afford protection for his family If this individual feels capable of instituting and administering his own savings program over a period of years, he will probably select term insurance on a five-year term basis, using the difference in premium cost between term and ordinary life, or 20-payment life insurance to augment his investment funds

If insurance for a short term is purchased, care must be exercised to avoid its expiration at a time when it is essential for family protection For that reason, many prefer to buy term insurance for a period long enough to rear their children or to the age of 65 Others prefer ordinary life to insure continued protection and to care for the fixed value portion of their investment program

The investor will then budget or plan and will proceed to invest the balance of his savings In this case emphasis may be laid on well-selected stocks, or, in earlier years, when the over-all fund is not sufficiently large to permit diversification, on well managed mutual funds The proportion of funds allocated to bonds or to fixed income securities may be less than in the case of a person less able to assume risk Furthermore, this individual will probably be investing for some period of years, and his stock purchases will be made over a period of years, thus giving him an opportunity to average the cost of stocks in his portfolio Furthermore, the insurance portion of his estate will be in the form of cash in the event of death As time progresses, the proportion of fixed income securities to equities may be increased to a level of, say, 40% to 50% in bonds, and 60% to 50% in equities In the development of his program the young man should achieve proper diversification As his fund grows, some application of formula control may well be developed to govern the allocation of funds between equities and bonds The tax problem of this individual will, of course, tend to limit the amount he can save and invest, but will not be instrumental in dictating his choice of investment media

If this young businessman has a strong bias against common stocks, or if the time does not seem opportune for common stock purchases, or if he invests early in a business, he may concentrate his savings in fixed value investments In that case he will probably find it advantageous to invest in United States Savings bonds, in the shares of savings and loan associations, or in a savings bank deposit account

**The middle aged successful businessman** This individual will probably be in a fairly high income-tax bracket and will have rather heavy family obligations If this individual owns his own business and is operating it successfully, his first emphasis in developing an investment program may well be on high-grade bonds, possibly tax exempts An individual of this type has a commitment in equity through his own business If he is successful in its operation there is no occasion to make outside investments where the control and management of his capital will be in other hands. This type of individual, however, needs an offset or counterbalance to the hazards of his own business, that is, a conservatively invested fund capable of producing an income during periods of depression Furthermore, the day may come when he will sell all or a part of his own business, in which event the cash so received can then be apportioned between equities and bonds, including his holdings, in such a way as to achieve a proper balance

Individuals of the type under consideration must always bear in mind the problems created by estate and inheritance taxes If one assumes ownership, partial or complete, of a small business or a business whose shares are not readily marketable, it is essential for the estate to have, at death, available liquid assets to pay inheritance taxes and other costs involved in the administration of the estate Too heavy a reliance on outside stock holdings is ill-advised, since they may have to be sacrificed in the event that funds for the payment of taxes are required at a time when the prices of stocks are depressed

A successful businessman, assuming his situation is such that investments in equities may go along *pari passu* with investment in bonds, may well seek stocks that strongly emphasize growth rather than current dividends Such investments comprise high-grade bank stocks and stocks of strong growth companies with low current dividend yields, since dividend income will be subject to much higher tax rates than capital gains If, upon retirement, current income becomes important, the capital gain resulting from holding growth stocks may be realized by sale of such securities, and the funds reinvested in securities that emphasize current income

Because the accruing return on the investment portion of any life insurance policy is not subject to any personal income tax until the policy is surrendered for more than the premiums paid in, this businessman may find it advantageous to purchase policies with a substantial investment element instead of term insurance Ordinary or limited payment life may be desirable The investment part of the premium on such a policy is in effect invested in a fixed value bond fund, and the problems of management and diversification are thrust upon the life insurance company The avoidance of immediate income tax upon the investment income and the freedom from care may well compensate for the moderate rate of return

**The retired businessman** It is appropriate to consider this type of individual next in order, since he may be the successful businessman at a later date One marked difference will probably characterize the requirements of the retired man in contrast to the types just discussed, current income will become more important than capital appreciation, and emphasis will be placed on stability and security A conscious effort will be made to eliminate risk In this respect, it should be pointed out that risk should never be assumed lightly, nor should risk be assumed on the theory that the existence of risk creates opportunity for large profits Risk, when assumed, should be carefully analyzed and measured against the possibility of gain and loss The retired businessman will wisely eliminate risk as far as possible, unless his income is adequate to provide for his needs and to furnish a margin with which to speculate Since he will not have further opportunity to build capital, his aim should be to preserve capital

In view of the greater emphasis that the retired man will undoubtedly place on safety, the proportion of bonds to stocks in his portfolio may well be increased, thus reducing risk and lessening the need for continuous supervision and care  The level of his over-all income and his tax status will indicate the amount of tax exempts that should be included in the fund

**The widow's requirements** The reader has probably surmised the principal requirements that must be set up to govern investments for the elderly, or for those who must depend in whole or in part on the income from invested funds  Safety comes first, naturally  Next comes the problem of injecting some protection against the forces of inflation  Here again it may be necessary to compromise and to allocate a portion of the fund to high-grade equities in order to gain the needed inflation hedge

In the case of individuals dependent on investment income for the wherewithal to meet living costs, maximum income consistent with safety is usually a paramount object  Hence, some investments must be made with yield in mind  In such cases, high-grade preferred stocks or utility common stocks may be considered, even though there are long-term inherent disabilities to one or both of these types of investments

And, finally, consideration may be given to annuities  The purchase of an annuity consists of the purchase, for a lump sum, payable in one or a number of instalments, of a series of annual payments  For simplicity, we will consider that payment for the annuity is made in one instalment  Thus, assume an elderly lady, or man, with no dependents, possesses a given sum of money, for example, $50,000  Such an individual may well say, "I expect to live ten years more, and thus can spend each year $5,000, plus whatever interest my fund can produce, and by the time I die, the $50,000 will have been used up"  The difficulty, of course, lies in the inability of the individual to determine in advance how long he or she will live  An insurance company, on the other hand, dealing with a sufficient number of cases, can reasonably forecast the actuarial length of life of those to whom it sells annuities, and can thus sell to an individual with a life expectancy of ten years, annual or annuity payments of $5,000 for the balance of his or her life  If a sufficient number of such annuities are sold, some of the annuitants will die before the expected age, others will live longer  To the insurance company this is unimportant, so long as the group life expectancy is attained  On this basis an insurance company can agree to pay *x* dollars for life in return for a stated amount, the cost of the annuity being mathematically determined on the basis of life expectancy, a rate of return on the unpaid balances, and a loading to cover expenses of selling and administering the company

For individuals beyond the age of earning capacity, with no dependents, the annuity provides a method of insuring a certain dollar return for life There are modifications of the annuity agreement, the most common of which provides that the annuity shall continue so long as either of two persons, such as man and wife, shall survive Such a contract is known as a joint and survivorship annuity The yield per year will be less than for a single annuity since the expectancy of paying for a longer period is greater Other forms of annuity are also used, such as the "premium refund" form, which provides that the entire sum paid in shall be returned either to the individual or to his estate An additional charge is made to cover the actuarial costs of any concessions

The growing longevity of old people in general and of annuitants in particular plus the declining rate of interest on fixed value investments have greatly reduced the returns available from annuities In the meantime, the return from common stocks has not declined to the same extent (See Figure 23, page 719) For that reason some have found investment in common stocks desirable for at least a portion of their retirement fund Such investment counterbalances the inflation risk, which is the gravest hazard to the owner of an annuity Where the fund is too small for adequate diversification, the use of investment company shares or of a trust fund with a bank is indicated The avoidance of investment cares is especially desirable for those who are past the age of retirement

**Conclusion.** It is comparatively easy to set forth various factors to be considered by the individual in the development of a successful investment program The execution of a program is far more difficult Constant research and analysis are necessary not only to enable the individual to make selections of securities that fit into his preconceived program, but also, after securities have been purchased, particularly common stocks, it is necessary continuously to follow financial reports in order to assure that performance equals expectation Many individuals do not have the ability or the time to do this Such individuals should employ the service of experts, either corporate trustees or investment counsel, to assist them

Having determined upon a program, one should avoid the temptation to deviate, to change, or to let short-term considerations supplant long-term planning In this respect, a word of caution against short-term trading operations is worthwhile It always has been difficult to make money through so-called trading in stocks—today it is practically impossible, due to the heavy loading against the trader in the form of taxes, commissions, and transfer taxes The so-called "round-trip" expense means that to make money on shorter-term swings a trader must be right better than 75% of the time

If stocks are properly analyzed and are purchased as a part of a long-term program, sales should be contemplated only for urgent reasons, such as (1) failure of the company to live up to its original expectations, (2) the desire to liquidate a portion of stock holdings under a formula plan, or (3) the existence of a definitely superior investment opportunity It should also be pointed out that there are cases where a given investment has exhausted its possibilities and thus may be considered as a candidate for liquidation in order to provide cash for new and more vigorous situations

The final results of any investment program are likely to vary in rather direct proportion to the care and thought expended in its development and execution

# Appendix
# and
# Selected Reference Material by Topics

# Appendix

## HIGH GRADE BOND YIELDS 1900–1949

(See Figure 5, page 116)

| *Year* | *Railroad* | *Public Utility* | *Industrial* | *Municipal* |
|---|---|---|---|---|
| 1900 | 4.05 | 4.54 | 4.86 | 3.12 |
| 1901 | 3.90 | 4.47 | 4.78 | 3.13 |
| 1902 | 3.86 | 4.46 | 4.71 | 3.20 |
| 1903 | 4.07 | 4.61 | 4.88 | 3.38 |
| 1904 | 4.03 | 4.58 | 4.87 | 3.45 |
| 1905 | 3.89 | 4.43 | 4.53 | 3.40 |
| 1906 | 3.99 | 4.56 | 4.58 | 3.57 |
| 1907 | 4.27 | 4.91 | 4.99 | 3.86 |
| 1908 | 4.22 | 4.99 | 5.07 | 3.93 |
| 1909 | 4.06 | 4.73 | 4.76 | 3.78 |
| 1910 | 4.16 | 4.80 | 4.83 | 3.97 |
| 1911 | 4.17 | 4.78 | 4.78 | 3.98 |
| 1912 | 4.21 | 4.78 | 4.81 | 4.02 |
| 1913 | 4.42 | 4.94 | 4.99 | 4.22 |
| 1914 | 4.46 | 4.87 | 4.93 | 4.12 |
| 1915 | 4.64 | 4.88 | 4.97 | 4.16 |
| 1916 | 4.49 | 4.79 | 4.89 | 3.94 |
| 1917 | 4.79 | 5.09 | 5.09 | 4.20 |
| 1918 | 5.20 | 5.76 | 5.45 | 4.50 |
| 1919 | 5.29 | 5.84 | 5.40 | 4.46 |
| 1920 | 5.79 | 6.73 | 6.01 | 4.98 |
| 1921 | 5.57 | 6.56 | 5.96 | 5.09 |
| 1922 | 4.85 | 5.46 | 5.21 | 4.23 |
| 1923 | 4.98 | 5.41 | 5.26 | 4.25 |
| 1924 | 4.78 | 5.22 | 5.21 | 4.20 |
| 1925 | 4.67 | 5.06 | 5.06 | 4.09 |
| 1926 | 4.51 | 4.90 | 4.91 | 4.08 |
| 1927 | 4.31 | 4.78 | 4.83 | 3.98 |
| 1928 | 4.34 | 4.68 | 4.88 | 4.05 |
| 1929 | 4.60 | 4.91 | 4.96 | 4.27 |
| 1930 | 4.39 | 4.75 | 4.86 | 4.07 |
| 1931 | 4.66 | 4.68 | 5.07 | 4.01 |
| 1932 | 5.32 | 5.32 | 6.06 | 4.65 |
| 1933 | 4.64 | 5.02 | 4.89 | 4.71 |
| 1934 | 4.08 | 4.66 | 4.20 | 4.03 |
| 1935 | 3.76 | 4.02 | 3.78 | 3.41 |
| 1936 | 3.47 | 3.57 | 3.18 | 3.07 |
| 1937 | 3.53 | 3.45 | 3.20 | 3.10 |
| 1938 | 3.70 | 3.28 | 3.05 | 2.91 |
| 1939 | 3.47 | 3.03 | 2.86 | 2.76 |
| 1940 | 3.30 | 2.92 | 2.67 | 2.50 |
| 1941 | 3.11 | 2.83 | 2.67 | 2.10 |
| 1942 | 3.17 | 2.87 | 2.73 | 2.36 |
| 1943 | 3.05 | 2.73 | 2.68 | 2.06 |
| 1944 | 2.95 | 2.72 | 2.66 | 1.86 |
| 1945 | 2.76 | 2.67 | 2.56 | 1.67 |
| 1946 | 2.63 | 2.58 | 2.52 | 1.64 |
| 1947 | 2.72 | 2.67 | 2.58 | 2.01 |
| 1948 | 2.93 | 2.92 | 2.78 | 2.40 |
| 1949 | 2.74 | 2.76 | 2.64 | 2.20 |

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*(Also see footnote references in each chapter)*

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